

Railway Age

DECEMBER 30, 1944

Founded in 1856

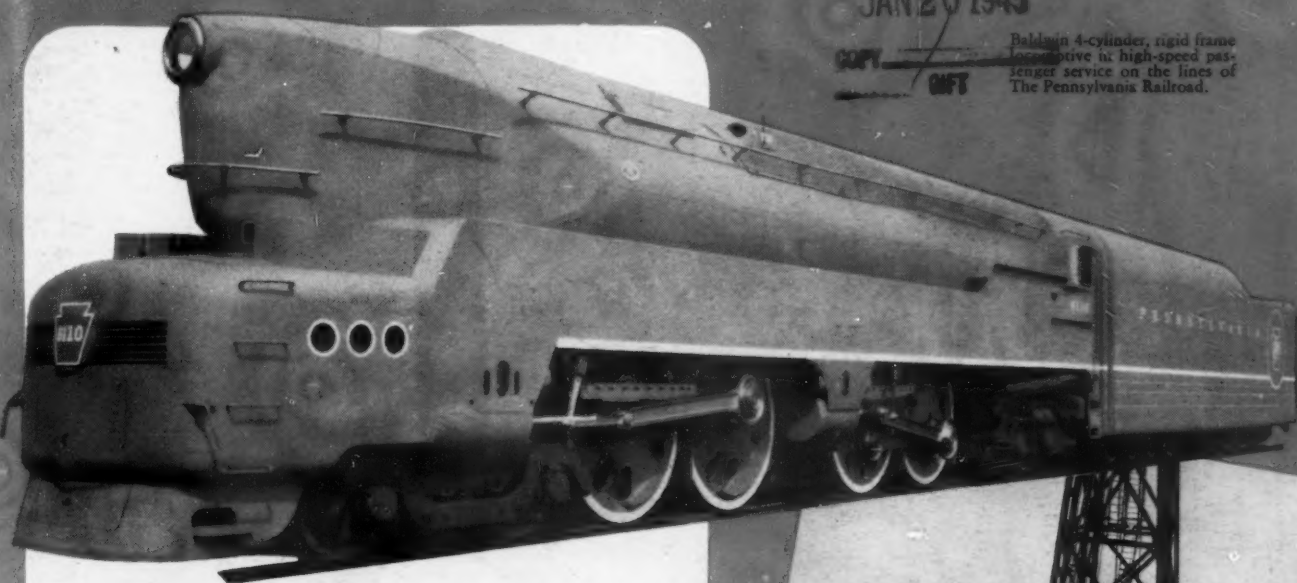
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CONGRESS

SERIAL RECORD

JAN 20 1945

COPT
CMT

Baldwin 4-cylinder, rigid frame
locomotive in high-speed pas-
senger service on the lines of
The Pennsylvania Railroad.



BALDWIN

At Home and Overseas

Thousands of locomotives of all types, built by Baldwin, are in the service of our country. Those hauling the raw materials, finished products and military personnel in this country are "at war" just as truly as the military locomotives which are carrying the Baldwin nameplate to many fighting fronts. The Baldwin Locomotive Works, Locomotive and Ordnance Division, Philadelphia, Pa. Offices: Philadelphia, New York, Chicago, Washington, Boston, Cleveland, Detroit, St. Louis, San Francisco, Houston, Pittsburgh.



Unloading a Baldwin 2-8-0
type United States Army
locomotive on the pier at
Casablanca.



BALDWIN LOCOMOTIVES

BALDWIN PRODUCTS FOR THE RAILROADS: Steam, diesel-electric and electric locomotives, Diesel engines, Hydraulic presses, Special rail-road shop equipment, Testing machines and instruments, Steel tire and rolled steel wheels, Crane wheels, Connecting rods and other steel forgings, Steel castings, Springs, Metal plate fabrication, Boilers, Non-ferrous castings, Bending rolls, Plate planers, Dynamometer cars.

Happy and Victorious **New Year!**



UNIT TRUCK CORPORATION

140 CEDAR STREET

NEW YORK 6, N. Y.

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Subscription price \$6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 117, No. 27.

when it's stamped

BETHLEHEM

IT'S A HIGH-MILEAGE, HIGH-SAFETY WHEEL

For the nation's railroads, Bethlehem wrought steel wheels and forged steel axles have always had a reputation for durability . . . for high mileage. That same long life is doubly valuable today when replacements are not plentiful; when maintenance crews are smaller and service demands the heaviest in history.

The very durability that means increased mileage also implies a high standard of safety. That Bethlehem wheels and axles are safe is proved by their operating records, past and

present. Today, especially, wartime loads are testing equipment to the utmost . . . and Bethlehem wheels and axles by the thousands, in both freight and passenger service, are safely and dependably carrying the tonnages assigned to them.



Build up worn Crown Brass this service-proved way

BY WELDING
with
AIRCO No. 19
BRONZE ELECTRODE



CROWN BRASS and other bearing surfaces that have become worn can be reconditioned quickly and economically with Airco No. 19 bronze. This electrode was developed especially for building up worn bearing metal by welding, and it is successfully employed by a number of railroads.

Airco No. 19 bronze has a high lead and tin content, with virtually the same analysis as poured brass bearing metal. It is applied either by carbon arc or metallic arc welding.

Quantities of worn crowns may be built up quickly by use of a positioner similar to that shown above. The bronze deposit is applied to the back and face of the crown for a distance of four or five inches from the toe edges.

Crown and back end main rod brasses after having been built up with Airco No. 19 bronze.

Service-worn welded crowns can be rebuilt many times by welding providing the brass remains in good condition.

Driving box laterals, shoes, wedges, and other locomotive wearing parts can be rebuilt and maintained economically by this method. For further information and technical assistance, write to your nearest Air Reduction office.

★ BUY UNITED STATES WAR BONDS ★



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MAGIC CARPET SAFARI

No proud train announcer's booming voice ever rang out with any such chain of stops as makes up the route operated globally today by U.S. railroaders in the Army Transportation Corps.

. . . Naples, Brindisi, Licata, Oran, Fez, Algiers, Bandar Shahpur, Korramshahr, Kaunia Ju, Gauhati, Noumea, Anchorage, Fairbanks. . .

Why, it sounds like a magic carpet safari, this roll call of places where, in critical 1944, American trainmen are rolling the sinews of war.

Highballing for battle lines over some of the strangest roadbed and under some of the most trying conditions in the world, U.S. railroad men just had to be good. Consider a few of the operating oddities they have faced—

In Alaska, water froze in boilers, crews were marooned on trains by snowdrifts, wheels froze to the tracks.

In India, American soldier-railroaders, taking over part of the Bengal-Assam railway, found at Siliguri the world's broadest-gage rail—5½ feet—connecting with a 2-foot track, which is the world's narrowest.

There, too, wild elephants wreck trains, human sanders squat on the pilot over the rails to drop sand on an upgrade, and dispatching consists of giving the engineer a brass check which allows him to proceed to the next station.

In Iran, American railroaders operate over a single track that literally clings to the sides of cliffs, where 225 tunnels black-out 50 miles of track between the Persian Gulf and Teheran, and bridges number in the thousands.

In Italy, they had to combat a devilish iron hook used effectively by the Germans to rip out tracks.

In North Africa, the rail battalions came face to face with 22 "Pershing" locomotives which the U.S. had shipped to France for service in World War I back 25 years ago.

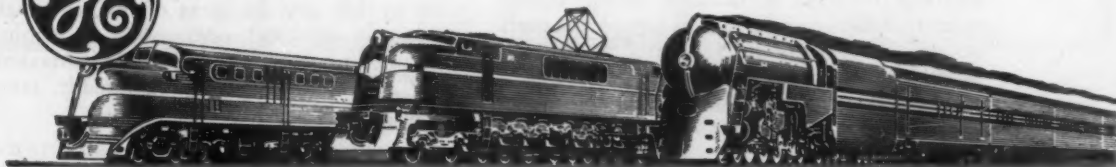
It has taken smart, ingenious railroading to meet conditions as diverse as global warfare makes necessary. Casey Jones, railroadman-of-war, has had it to give.

—The Trackwalker*

★ ★ ★



Dependable motive power for many "magic carpet safaris" is provided by the hundreds of Alco-G.E. diesel-electric and steam locomotives which keep supplies moving from tidewater to foreign fighting fronts in a never ending stream.



AMERICAN LOCOMOTIVE • GENERAL ELECTRIC

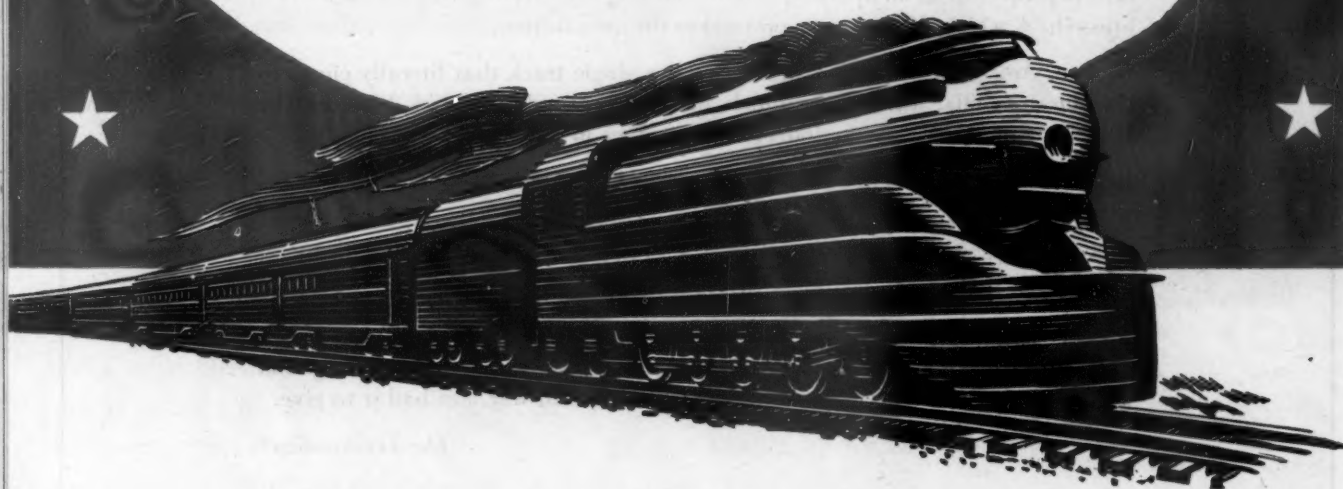
Copr., 1944, American Locomotive Company, and General Electric Company

*Reg. U.S. Pat. Off.

113-90-9500

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*A Postwar Development
... Ready Today*



HERE is a completely new machine built to cope with the demands of modern rail mill practice and to overcome the disadvantages of earlier designs.

The service expected from a rail drill is hard and the treatment accorded it severe; consequently, Sellers construction is simple, the parts strong and the spindles supported as close as possible to the work. Its gearing is unusually strong and mounted in oil-type casing on the top of the main housing. All gears are high grade forgings and run in oil. All shafts are mounted in anti-friction bearings . . . This type of drive requires no more attention than the rear axle of an automobile.

The saddle carrying the tool steel drill spindles is counter-balanced and provided with fluid power feed and power traverse . . . All movements are under instant control. The rail being drilled is clamped or unclamped hydraulically. The vertical stroke is 6½" . . . Saddle can be set to drill any thickness of rail, either automatically or hand operated . . . Minimum distance between spindles is 3½". Maximum, 12" . . . Spindle speeds are variable, ranging from 45 to 180 RPM.

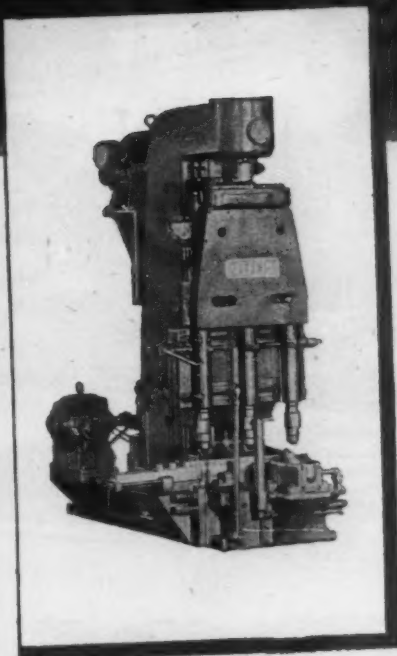
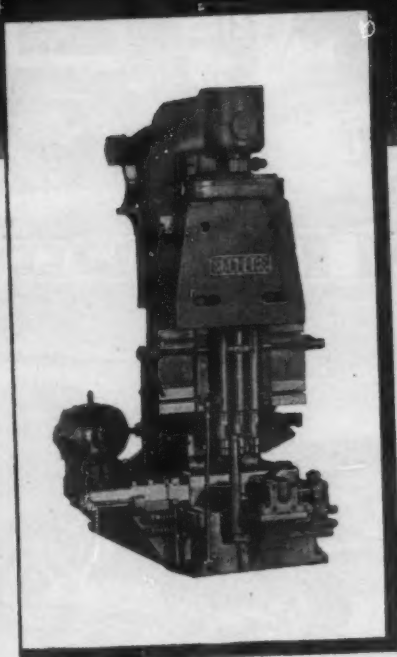
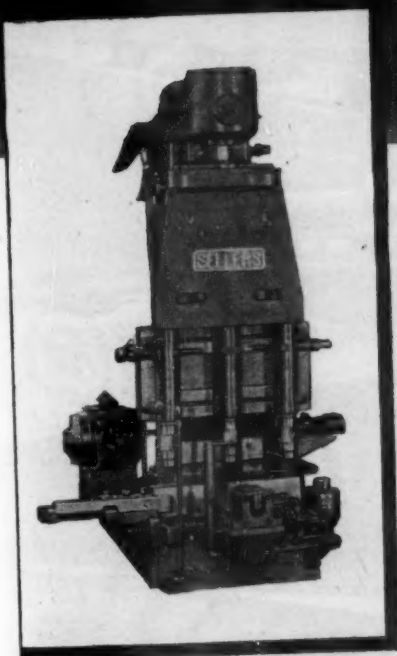
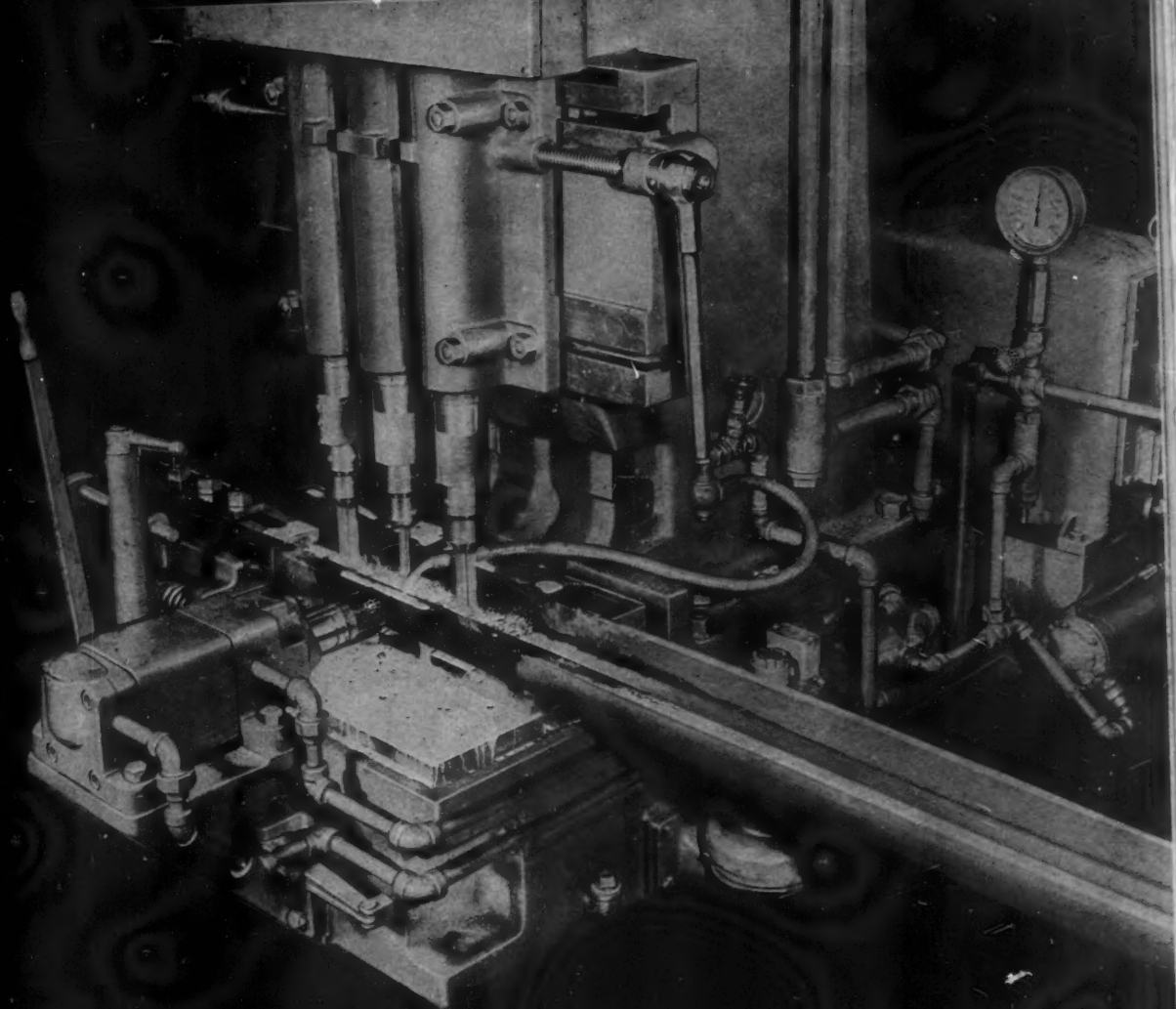
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2 3/4% Nickel Steel locomotive rods,
one bent cold to show ductility.

QUENCHED AND TEMPERED
NICKEL STEEL
FORGINGS COMBINE

EXCEPTIONAL DUCTILITY WITH HIGH TENSILE STRENGTH

Composition and Typical Properties of Normalized Quenched and Tempered 2 3/4% Nickel Steel Rods

Description or Size	Melt Yield Pt. No. #s per Sq. In.	Tensile Strength #s per Sq. In.	Elong. % in 2 In.	Reduc- tion in Area %	ANALYSIS					
					Car.	Mang.	Phos.	Sul.	Sil.	Ni
Main Rod....	92900	110000	25.0	64.4	.31	.78	.027	.026	.25	2.75
Main Rod....	86500	104500	25.5	65.6	.32	.86	.034	.032	.29	2.69
Main Rod....	86360	104400	26.0	64.8	.32	.86	.034	.032	.29	2.69
Main Rod....	87850	102350	26.0	66.2	.31	.89	.037	.025	.32	2.69
Front Rod....	86000	102250	25.0	67.3	.29	.82	.035	.027	.24	2.71
Front Rod....	83900	104250	25.0	66.1	.29	.82	.035	.027	.24	2.71
Front Rod....	86850	104250	27.0	66.1	.32	.86	.035	.025	.30	2.65
Front Rod....	89500	107050	25.5	65.6	.32	.86	.035	.025	.30	2.65
Back Rod....	89500	107650	25.0	62.7	.30	.79	.030	.025	.22	2.71
Back Rod....	87500	106450	25.0	65.4	.29	.82	.035	.027	.24	2.71
Back Rod....	87000	105600	25.0	65.4	.29	.82	.035	.027	.24	2.71
Back Rod....	88150	104850	26.0	66.8	.29	.82	.035	.027	.24	2.71

Specimens Taken from Mid-Section of Prolongations of the Forgings

The above table compiled by the American Locomotive Company shows the chemical compositions and mechanical properties of some normalized, quenched and tempered nickel steel front, main and back rods recently produced as replacement rods for locomotives being speeded up and rebalanced. These values are typical of replacement rod forgings recently tested by that company.

Quenched and tempered nickel steel forgings provide high tensile strength and ductility, combined with unusual toughness and high fatigue strength—qualities which tend to obviate breakage and assure long, trouble-free service when employed in heavy duty machinery and equipment.



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makes it easy for
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and bulletins on in-
dustrial applications
of Nickel, metallurgi-
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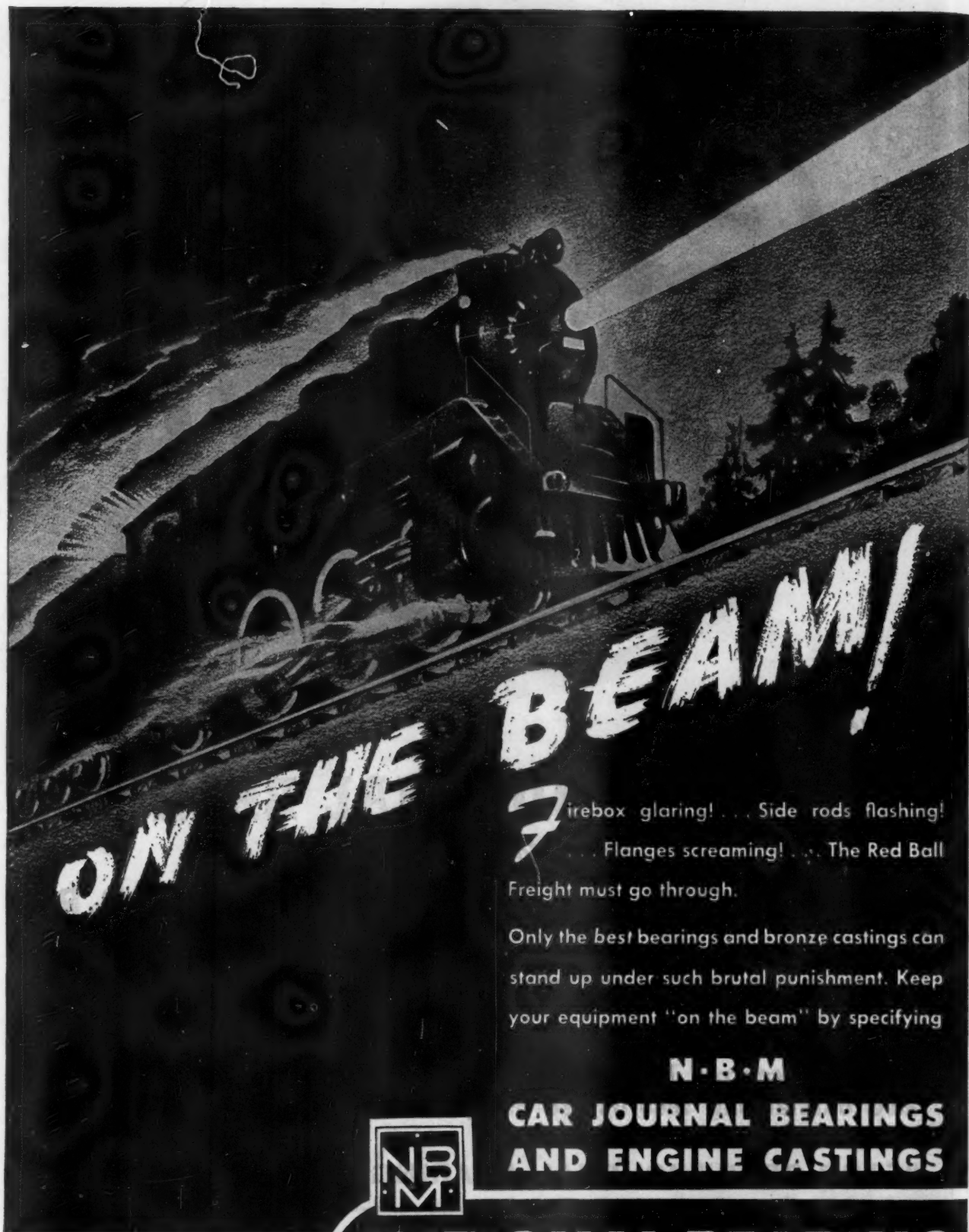


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Flanges screaming! . . . The Red Ball
Freight must go through.

Only the best bearings and bronze castings can
stand up under such brutal punishment. Keep
your equipment "on the beam" by specifying

N·B·M

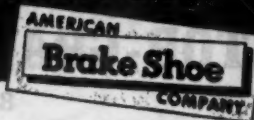
**CAR JOURNAL BEARINGS
AND ENGINE CASTINGS**

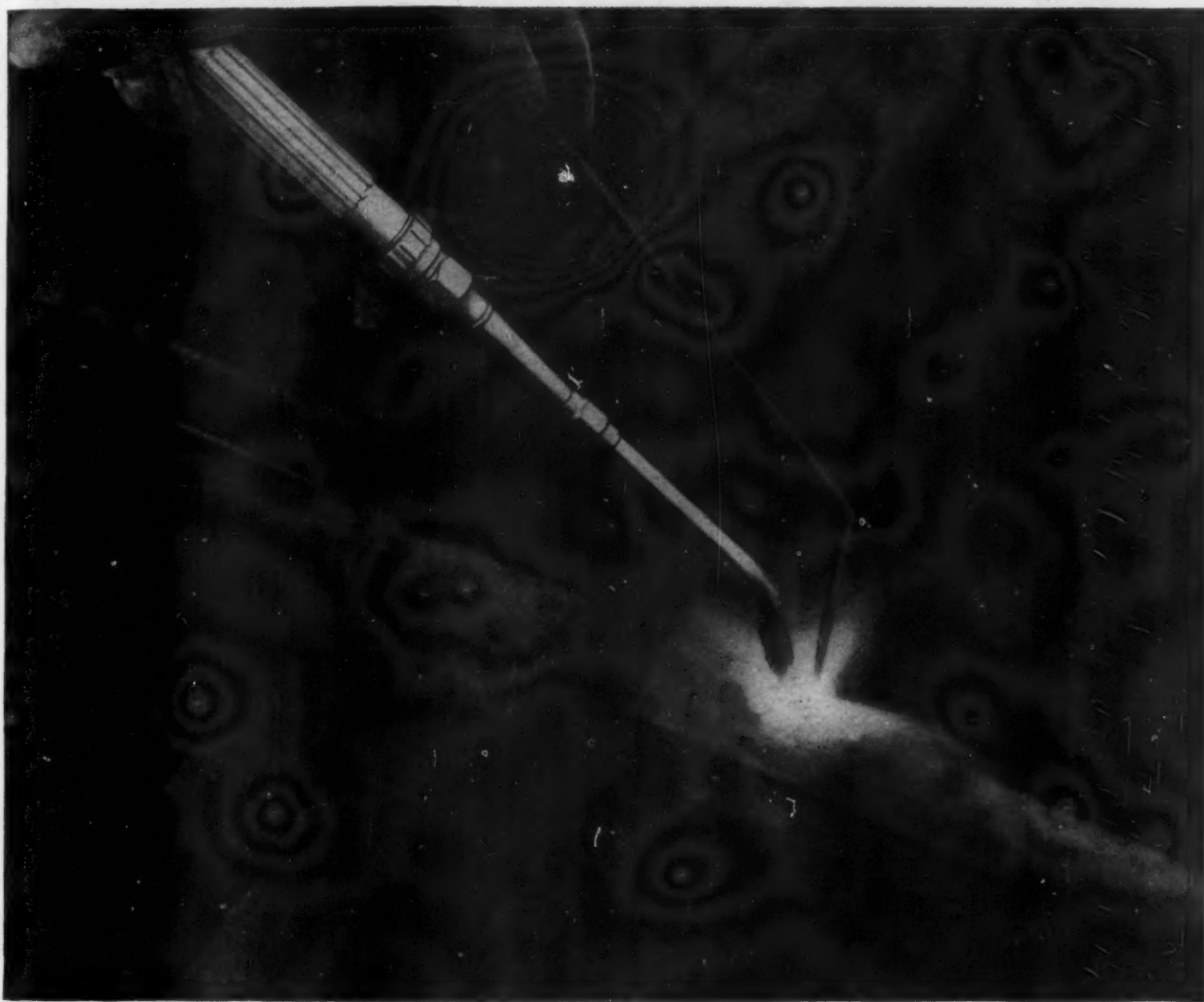


NATIONAL BEARING

METALS CORPORATION

ST. LOUIS • NEW YORK





Build up Worn Rail and Trackwork *by OXWELD'S Method*

• Battered rail and trackwork can be economically restored to serviceable condition by Oxweld's rebuilding procedures. The cost of rebuilding amounts to only a fraction of the expense of new units, and the true riding surface so obtained results in smoother handling of freight, greater passenger comfort, and reduced wear on ties, joint bars, bolts, and rolling stock.



Use of OXWELD MW welding rod speeds rebuilding work and provides a surface that is more batter-resistant than the original rail metal. Careful performance of the operation under Oxweld's

procedures assures proper alignment and permits the rebuilt areas to be finished to the proper surface with a minimum of grinding. Ask an Oxweld representative for further information.

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation



Carbide and Carbon Building Chicago and New York



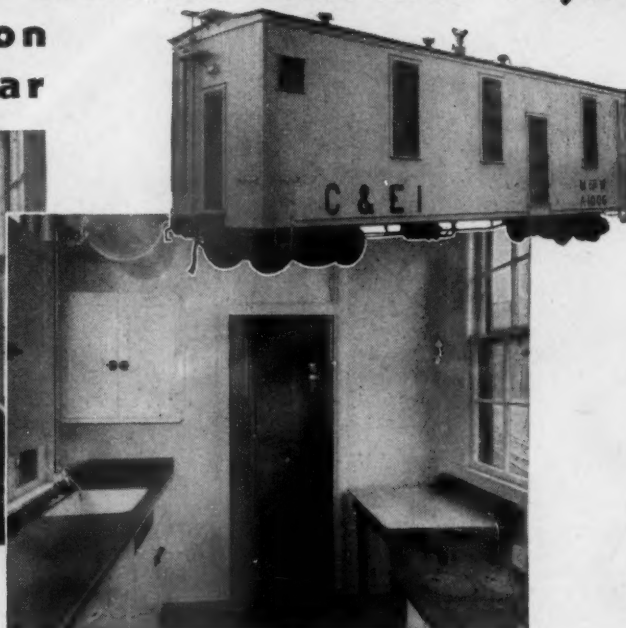
SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

The word "Oxweld" is a registered trade-mark.

DOUGLAS FIR PLYWOOD DOES ANOTHER RAILROAD JOB BETTER!



Chicago and Eastern Illinois Chooses Plywood For Interior Finish on Rebuilt Camp Car



Study these photographs of the rebuilt C&E camp car—and see how Douglas fir plywood made possible a smoother, more attractive interior. It's another example of the versatility of this strong, rigid, light-weight structural material.

An old 40 foot box car, the inside sheathing was removed and the car straightened up. Then the interior was finished with 1/2" plywood.

In new construction Exterior type Douglas fir plywood might also be used in a 5/8" thickness for outside sheathing.

Here are the advantages of Douglas fir plywood as an interior finish material for cars:

- 1—Costs are reduced. The large plywood panels—up to 4 x 8 feet in size—are applied faster, with a minimum of cutting and fitting.
- 2—Strength is assured. Douglas fir plywood's cross-laminated construction gives each panel an amazing strength, rigidity and durability. Walls are kick-proof, puncture-proof, split-proof.
- 3—The car is tighter—warmer. The reduction of joints and cracks means a car that is easier to heat in winter, cooler in summer. Drafts are minimized.

4—Appearance values are increased. The smooth, attractive plywood panels are easily and quickly given any type of finish.

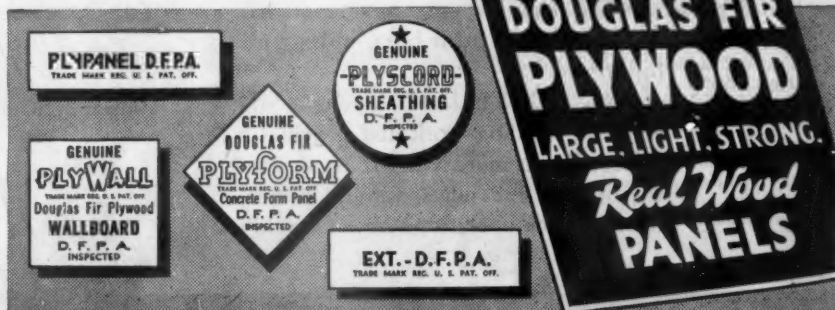
There is a type and grade of Douglas fir plywood for every railroad use: Interior type in several thicknesses and appearance grades; Exterior type also in several thicknesses and appearance for uses that are to be permanently exposed to the weather or moisture; Plyform, a special type in several thicknesses, for forming concrete structures.

For recommendations on the use of Douglas fir plywood in car

construction or other railroad uses, write or phone: Technical Director, Tacoma, Washington; Field Engineer at 1707 Daily News Building, Chicago 6; 205 East 42nd St., New York 17; 1224 Shoreham Bldg., Washington, D. C. 5; 701 Cogswell Road, El Monte, California.

Douglas fir plywood is now available only on priorities. Application for allocation must be made by suppliers to the War Production Board.

**DOUGLAS FIR PLYWOOD
ASSOCIATION**
Tacoma 2, Washington



SPECIFY DOUGLAS FIR PLYWOOD BY THESE "GRADE TRADE-MARKS"

HERE'S AN *IMPROVED* *4-WHEEL ENGINE TRUCK*

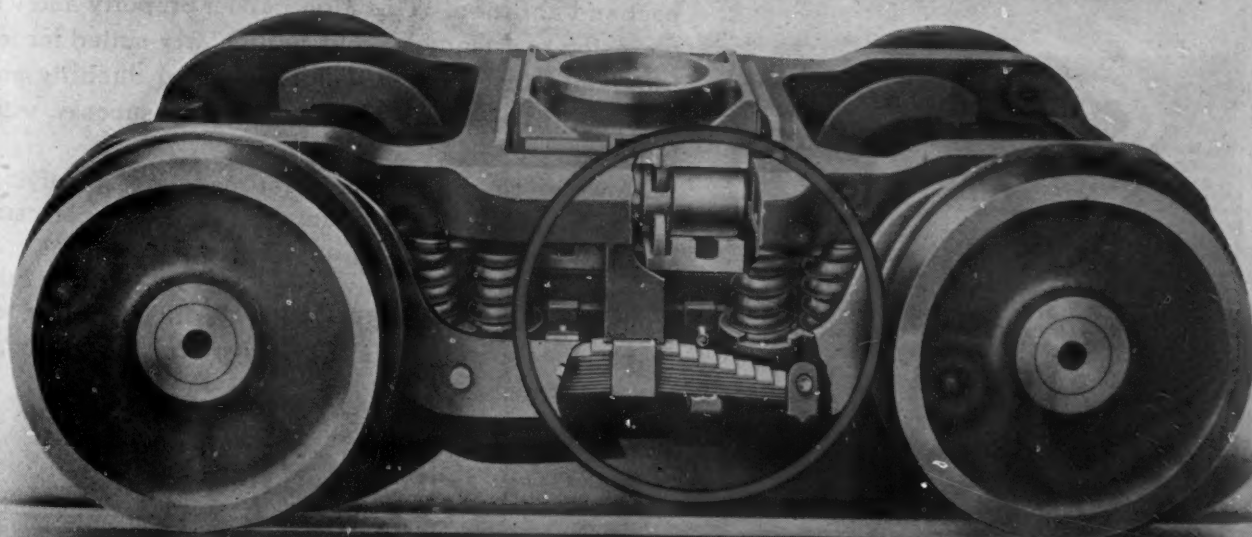
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This Commonwealth Engine Truck — *tested in service* — gives you all these advantages:

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- Spring capacity is increased.
- Spring breakage is reduced.

Furnished with improved roller type or rocker type centering device.

Lower your maintenance costs and increase locomotive availability with this newest type Engine Truck.



Equalizers and Truck Frame cut away to show Coil and Semi-Elliptic Spring Arrangement and Roller Type Centering Device.



GENERAL STEEL CASTINGS

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Yoloy Builds Again



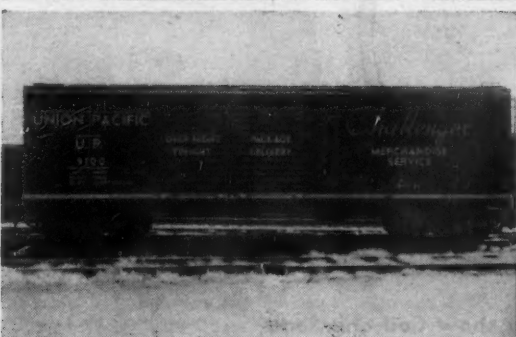
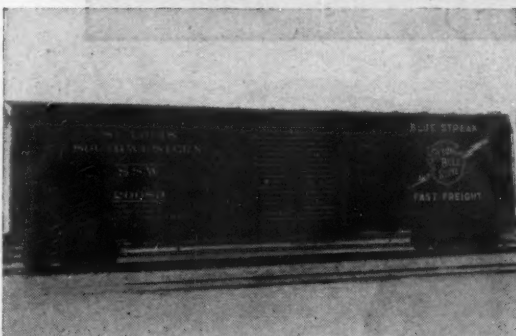
More Roads Build Boxcars with Sides of Yoloy Steel

A trainload of Yoloy steel for the sides of new boxcars--on their way to help America's busy railroads! Close-ups of typical finished cars, with these Yoloy sides, are shown at left.

Yoloy boxcar sides' great appeal is their ability to withstand corrosion. They also permit the car builder to combine lighter weight with maximum durability and extra strength. Yoloy has high resistance to impact and abrasion. This high impact property and its corrosion resistance make it particularly suited for refrigerator cars. Yoloy's weldability and ductility are essential properties that insure its success with builders.

No wonder more and more railroads are specifying Yoloy for boxcars, coal cars, gondolas, hopper cars, baggage cars, and streamlined passenger coaches.

This low-alloy steel is available now for the new cars you will order or build in 1945. Write for further information about Yoloy's actual performance in thousands of cars.



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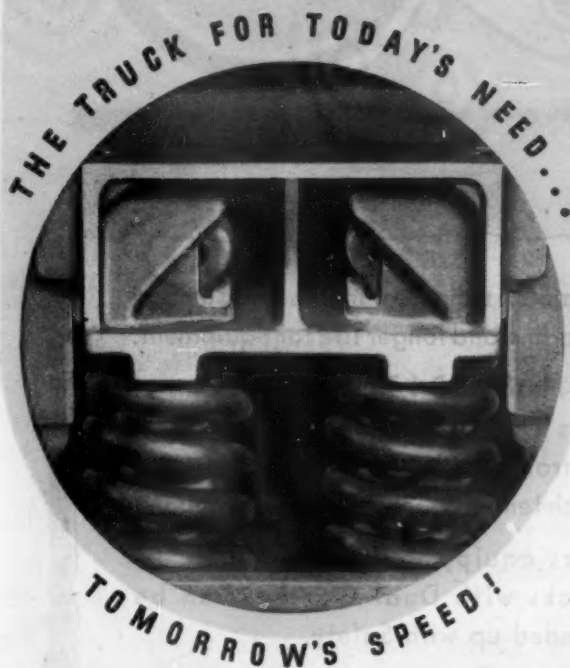
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Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

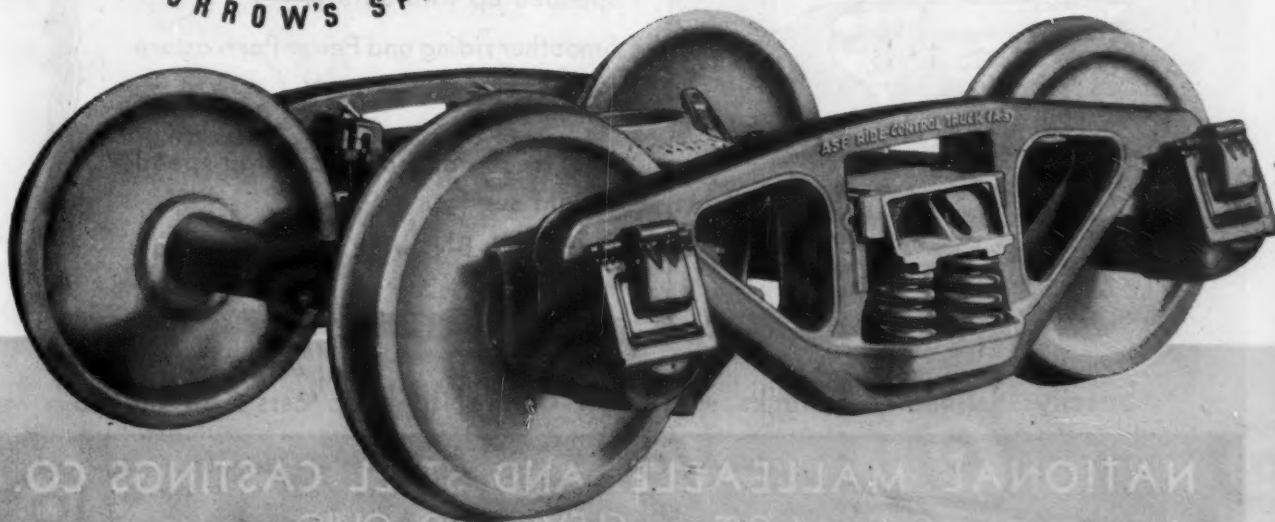
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TO STANDARDIZE . . .**

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American Steel Foundries recommends the Ride-Control Truck (A-3) for *all* freight cars, a recommendation that is based on more than four decades of experience in designing, developing, manufacturing, and selling freight-car trucks and parts. This truck is offered for use with coil springs of whatever travel best suits the various types of service for which freight cars are intended. Making it easier for the railroads that anticipate the future use of longer-travel springs, this truck can be arranged for use with shorter-travel springs initially. These can later be replaced by longer-travel springs if the cars are required for higher-speed service or if an A. A. R. standard spring having a still different travel should be developed.

NO SPRING PLATES • NO SPRING PLANKS

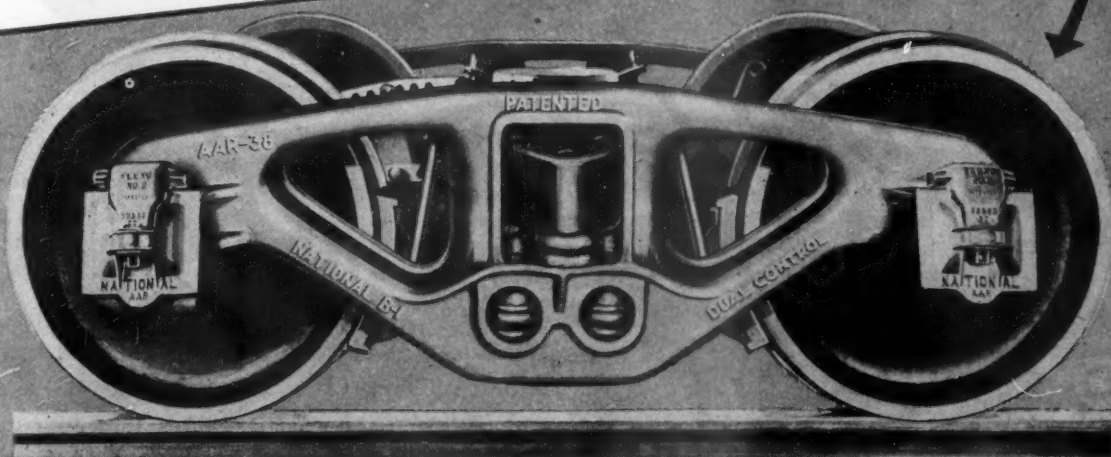


AMERICAN STEEL FOUNDRIES

CHICAGO

WINT-MARK OF FINE CAST STEEL

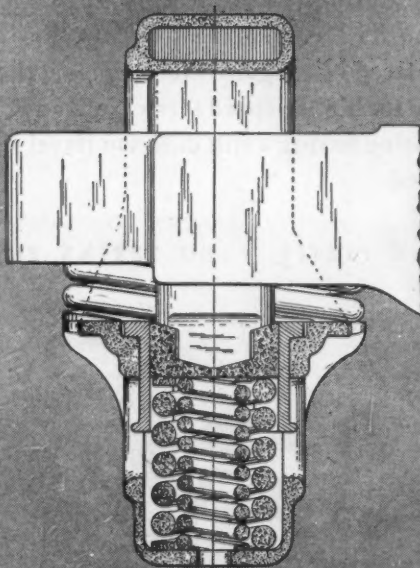
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No spring plates

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A smooth riding car means less damage to lading and longer life for equipment.

The National B-1 Truck has four control units (two in each side frame) which control "spring bounce" and forces which tend to throw trucks out of square.

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Smoother riding and Fewer Parts assure lower maintenance costs.

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Specify National B-1 Trucks with Dual Control to keep cars "on the go"

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Melter Simplifies Snow Disposal..... 990

A self-contained track-mounted outfit developed for use on the Boston & Maine is described by T. G. Sughrue and L. Richardson, who attest to its value for track and platform clearance during heavy storms.

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Maintain "On-Time" performance with "UNION" CAB SIGNALS!

AN installation of "Union" Cab Signals, *continuously controlled and constantly visible*, will provide clear, accurate, *instant* information of changing conditions ahead before the engineman in the cab. The Continuously Controlled Cab Signal substantially increases track capacity. Changed conditions on the track ahead are instantly reflected in the cab and delay time in a restricted block may be appreciably decreased when a change to a more favorable indication permits the engineman to increase his train speed.

Time is being saved and schedules are maintained on those railroads having "Union" Cab Signals in service. An installation of this signal system on your lines will help materially to expedite train movements now and in the competitive era ahead.



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The Week at a Glance

WASTE GRABS ENDED: It having been estimated that 70 per cent of all hot wheels arise from waste grabs, the New Haven began a number of years ago to seek out the causes, with the hope of overcoming them. Photographic studies showed that the best preventive was to keep the waste away from the "danger zone" at the lower edge of the lining metal of the brass, where a jumpy bearing can easily start a grab. So the New Haven designed a brass with ridges that extend down on each side and keep the dope at a safe distance away from the bearing surface. Since 1935 this design of bearing has been extensively tested in a wide variety of service, and no waste grabs in cars so equipped have been detected. The findings of this painstaking investigation are reported in an illustrated article in this issue.

NOW VANQUISHED EASILY: Snow disposal in congested areas around terminals is a costly, labor-wasting, and troublesome nuisance which the Boston & Maine has largely mitigated by a snow-melting outfit in use for the past two winters at North Station, Boston. Remodeled engine tenders have been fitted up as snow melters, heated by steam from a locomotive. The outfit consists of a snow-loader, melter, and locomotive and it is a fast worker. When snow starts to fall, sweepers and plows push the snow from platforms to tracks—giving the snow-loader a sufficient depth to begin on when the storm is still young (an important factor in keeping the effects of a heavy snow under control). This comfortable device and its accomplishments are described in an illustrated article herein.

CHALLENGE TO PURCHASERS: The railroads are likely to have new sources of supplies opened to them when the war ends—because many new products will find railroad uses, and war goods manufacturers are considering conversion to the production of articles bought by railroads. For these and other cogent reasons, Vice-President Mann of the Illinois Central in an article in this issue urges procurement officers to be alert to present and prospective changes "to keep open a clear channel for the movement of supplies from the producers to the users."

TOO MANY COOKS: Congress is considering the diagnosis, and possible correction, of its illogical and anachronistic organization—which explains why a group of tolerably reasonable lawmakers deal so awkwardly with important national business that they have acquired a popular reputation as stumble-bums. The leading editorial suggests that Congressional handling of transportation legislation would be a suitable place for the correctional process to begin—because nowhere is Congressional organization more inept, illogical, and wasteful than in this sector. In regulation Congress has a consistent policy, seeking to develop and retain a national transportation system, preserving the "inherent ad-

vantages" of each agency. But the committees which hand out federal aid to all agencies of transportation except the railroads do not work under this policy; rather, they constitute themselves special advocates of only one agency, and the devil take the rest. As a cartoon in our editorial pages depicts the situation, there are too many cooks in the kitchen, each one working on a menu of his own choice, with little thought to the appetite or digestion of the old gentleman, Uncle Sam, who employs them.

PUBLIC RELATIONS DEFINED:

A long-experienced practitioner in the field of public relations (H. M. Miles of the S. P.) in an article in this issue endeavors to cover the main duties of this all-inclusive job—but he is not able to set definite limits on the meaning of the term. He suggests that the content of the job may best be comprehended by considering the tools it uses. Among these he includes publicity, personal contacts, employee relations, established policies with defined objectives, policy advertising, public relations advertising, and radio programs. He insists that the task is far bigger than publicity; and for a competent press representative to believe thereby that he is an all-round public relations man is similar to an electrician's considering himself an electrical engineer.

1944 TRAFFIC: Passenger traffic in 1944 is estimated to have totaled 96 billion passenger-miles, or 9.3 per cent more than in 1943, while freight traffic, at an estimated 740 billion ton-miles, was 1.8 per cent above that of 1943. These and other noteworthy statistics of the past year's further heights of record-breaking performance are summarized in a year-end statement by President Pelley of the A. A. R., reported in our news pages.

LABOR'S & EMPLOYERS' JOB:

Management has a multitude of duties toward employees (more perhaps than either most managers or employees would believe without considerable reflection) and Vice-President Horning of the New York Central lists them in a thoughtful and comprehensive article on page 993 in this issue. He also goes on to explain how neither management nor employees will have job security unless they can make railroad service popular with the public, and railroad investments popular with people who have money in the bank. High prices for railroad service, made necessary by rules and laws which require wasteful employment, are bad for both managers and employees, because every man wastefully employed prevents the hiring of other labor which would attract rather than repel customers. Starvation "wages" for railway investments are bad for both managers and employees, because such treatment of investors deprives railroad people of modern tools with which to attract the maximum patronage and, hence, to afford the maximum in employment and wages.

RODGERS SOUNDS TOCSIN: The shipping public can thank its stars that it has such an alert servant in Ted Rodgers of the Trucking Association to instruct it in the protection of its own interest. As reported in our news pages, this portly Paul Revere has proclaimed the danger to the shipping community in the so-called "integration" proposals lest "private motor carriers such as dairies" be eliminated by the mischievous railroad Machiavellis. Rodgers' instructions will doubtless be gratefully received by leaders among shippers who are so somnolent and incapable of protecting their own interests that most of them are actually favoring the developments that Rodgers denounces.

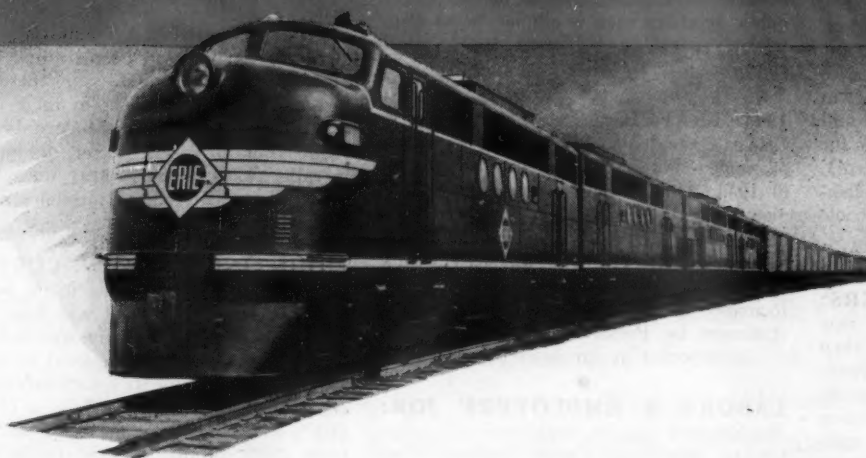
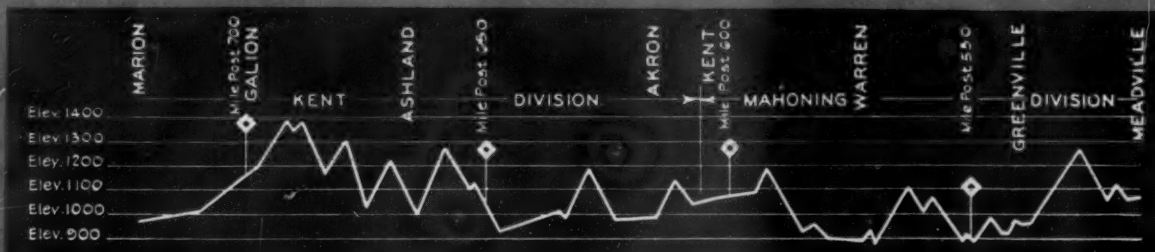
AIDING THE HISTORIANS: Interest in local community history is steadily growing in this country, and promises to keep mounting as the passage of time casts more folds of its veil over the past, making the desecrating of by-gone events more difficult and, hence, more interesting. An accomplished historian in railroad service, R. C. Overton, of the Burlington, recently addressed the national association of local historians, giving them some practical hints on getting the railroad part (an important part it is, too, of most local history) of their job straight, and in proper perspective. An editorial herein suggests that railroad people might profitably consider the interests of these local historians, assisting them in their efforts to get their facts right. Modern-day railroad reputations will suffer or improve, in ratio as historians portray the past accurately or with biased misunderstanding and faulty perspective.

MOUNTING M. OF W. COSTS: A lot of things now occurring in the maintenance of way department will have to be speedily unlearned when the war ends. For instance, one road with a good reputation for the modernity of its maintenance methods reveals that its per mile cost of labor and work trains for rail laying has risen from \$370 a mile in 1932 to \$1,230 at present. Labor and work-train costs for ballasting were \$550 per mile in 1932 and are \$2,290 per mile today. An editorial herein suggests that, while war-time operations have taught some valuable lessons, they have also forced the acceptance of some tendencies which will need to be resolutely repelled—as soon as volume output is no longer the over-riding objective of all railway activity.

LOAD-COMPENSATED BRAKES:

Smooth braking is hard to secure when equal force is applied both to empty and loaded cars, and the difficulty becomes acute in the increased loaded-to-tare ratios of lightweight cars. Chief Engineer C. D. Stewart of the Westinghouse Air Brake Company outlines the essentials of this challenging and complex enigma in a paper reported in this issue. He also considers the harmonizing of engine and tender braking with that of the train and recalls some of the past victories of brake engineers.

GM Diesels Conquer Heavy Grades on Two *Erie Divisions*



Now Handle Full Tonnage Trains Without Splitting

Six General Motors 5400 H.P. Freight locomotives have gone into service on the Erie to conquer the steep grades and to alleviate traffic bottle-necks on the Kent and Mahoning divisions. No longer will it be necessary to split eastbound freights at Marion and westbound trains at Meadville and tie them to-

gether again a few hours later. Diesel operation will mean that for the first time a solid train with full tonnage can be run from one end of the line to the other without splitting it up at intermediate terminals on account of grade changes — a big saving in time and serious traffic delays.

★ ON TO FINAL VICTORY



BUY MORE WAR BONDS ★

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION

LA GRANGE, ILLINOIS, U.S.A.

RAILWAY AGE

Congress' Responsibility for Transport Chaos

Congress has gained in the esteem of thoughtful people in recent years, not because of any noteworthy increase in its courage, wisdom, or efficiency, but rather by comparison with the steady deterioration in the executive and judicial branches of government. Actually, Congress is creaking along under a load of high-powered modern problems with a chassis which was out-dated even in the Nineteenth Century—and nowhere are the evil consequences of its illogical organization more evident or disastrous than in transportation.

The chaos of waste, duplication, and insolvency in transportation which prevailed before the war and may return is largely the product of the illogic and inconsistency of national legislation affecting the industry; and so long as legislative responsibility regarding transportation is divided among a half-dozen or more independent committees of each house, it will be idle to expect any improvement in the situation. Congress is awakening to some of its deficiencies and weighing plans for improving its organization. It could not find a better place to begin than its machinery for producing transportation legislation.

Congressional action affecting transportation has two aspects—regulation and supply of capital. Legislative action having to do with regulation is centered in the interstate commerce committees of the two houses, and—because only one body in each house deals with this subject—action is fairly consistent. The Interstate Commerce Act, sponsored by these two committees, contains a “declaration of policy,” wherein it is proclaimed to be the intention of Congress to “preserve the inherent advantages” of each type of transportation and to encourage the development of a coordinated “national transportation system by water, highway, and rail, as well as other means . . . to meet the needs of commerce and the national defense.”

So far as this objective is attainable by regulation of common carriers, Congressional legislation is reasonably consistent with its declared intention. But Congress has become the principal source of the supply of capital for additions and improvements to fixed transportation plant (i.e., for highways, waterways and airways)—and the manner in which Congress acts in supplying capital has far more effect on the ability of each type of transportation to demonstrate its “inherent advantages” than any possible legislative action having to do with regulation, especially because most of the transportation for which Congress supplies the fixed plant is “private” or contract, and is touched little or not at all by regulation.

The committees charged with the supply of capital for transportation development, unlike those which deal with regulation, have not accepted responsibility to “foster sound economic conditions . . . among the several carriers.” Instead, the highway committees of the two houses are concerned only with providing as much highway plant as they can get Congress as a whole to authorize. No charge is laid upon them to consider the national interest in preserving the “inherent advantages” of *all* forms of transportation, but only that of advancing the interests of *one* form. Similarly, the rivers and harbors committees of the two houses plug away at getting all the money they can for waterway improvements, with no obligation to consider the effect of their generosity on the over-all economy of transportation.

Supermen could not produce rational treatment of transportation from the organization that Congress has provided to deal with it, and Congressmen are not supermen. No business could be kept solvent or

Efficiency
FOR VICTORY

even continue in operation if it had spending departments which did not have to temper their activities by consideration for the welfare of the concern as a whole; and an economical and adequate national transportation system cannot be developed or preserved that way either.

Setting History Straight

The importance of adequate and accurate representation of the railroads in text-books, reference works and histories has been examined on several occasions in these pages; and it is gratifying to observe the growing interest in this heretofore poorly appreciated factor in public relations.

Most railroads have over a period of years succeeded in establishing friendly and understanding dealings with the newspapers. Newspaper reporters whose job it is to write railroad news are nowadays usually given easy access to it by the railroads, and acquaintanceship and cooperation exists to a large degree between these writers and the men designated by the railroads as their spokesmen in matters of public interest. The result has been, with few exceptions, that most railroad developments are adequately and fairly reflected in the news and editorial columns of the newspapers.

The condition is far different in reference and text-books. Try to find any one of them, for instance, which gives an understanding account of the magnitude of the land grants to the railroads, and how these donations have been repaid many times over by the railroads; or a discussion of the essential difference between such aids to the railroads and the outright governmental gifts to other agencies of transportation. Dr. Stanley Pargellis told the story of the dangerous inadequacy and inaccuracy of the interpretation by historians of the record of large business, especially the railroads, in a Newcomen Society address reported in the *Railway Age* of February 26, page 416.

Scientific opinion measurement has further disclosed that text-book misinterpretation of the railroads is one of the major causes for their relative lack of popularity among younger people, and in those localities where the standard text-books are unusually unfriendly. The representation of large business, and especially the railroads, in such books, largely in terms of the misdeeds of a few spectacular malefactors, is an impression that students carry away with them, which is seldom corrected in after years unless the people thus indoctrinated have close and favorable experience with the maligned industries in their post-school careers. Or, when industrial character is not misrepresented in these books, it may be dealt with superficially or not at all. The student is, thus, usually left either ignorant of an important and beneficent social force or led to consider this force as primarily an evil.

The writers of such books—or, rather, of the basic research works upon which the more popular writers rely as secondary sources—cannot, generally speaking, be accused of an active desire to misinterpret and mis-

represent. As Dr. Pargellis pointed out, the major cause of the incompleteness or inaccuracy of their recording is the relative inaccessibility to them of material to substantiate a more constructive interpretation of industry's achievements.

This is a question into which resourceful public relations officers should and doubtless will delve increasingly until an effective corrective is discovered and applied. One of several hopeful approaches to it is suggested in a recent address on "Railroad Records and Local History" by R. C. Overton, superintendent of the Burlington's relief department, before the American Association for State and Local History. This paper, too long unfortunately for reproduction here, gives specific suggestions to local historians regarding the important part that railroads have played in such history. The paper would be similarly informative to railroad men in indicating to them how they could, to the advantage of the railroads, extend their cooperation to these historians, with the ultimate goal that railroads may become more adequately known and appreciated by the book-reading public. Probably Dr. Overton could supply copies of his discussion to railway officers with a serious professional concern in this situation.

More Highway Subsidies for Railways' Competitors

The ownership of an automobile of some kind is one of the things regarded as an inalienable right by even the poorest American. This is true in no other country. After a recent visit to Russia, Eric Johnston, president of the U. S. Chamber of Commerce, recited an interesting evidence of this. The Soviet authorities seized upon the film of John Steinbeck's "The Grapes of Wrath," depicting the trials and tribulations of a family of "Okies" en route to California, as excellent propaganda material to illustrate to Russians the horrors of life in the capitalistic United States. But after viewing the film, the high Communists decided against showing it to the general public. The poverty of the "Okies" depicted is all too common in the U. S. S. R.; and, much more important, the Communists felt their peasants would be impressed by the fact that the "Okies", as poor as they were, owned an automobile, the use of which only the highest Communists can enjoy in Russia.

Everyone's owning a car is so ingrained here that it has become a vital part of the American way of life. And, certainly, it has become and will remain one of the most constant and important threats to railway passenger business. There will always be "tin-can" tourists rattling about on the country's highways, but, in order that railway officers may have some idea as to the type and scope of such competition in future, a knowledge of the planning for post-war highways is essential.

Such planning recently jelled to a point where a \$1,500,000,000 three-year plan was given Congressional

sanction. It includes, for the first time, the giving of federal money to cities for urban highways, and apparently also provides that federal funds, instead of local money as heretofore, shall pay the cost of acquiring rights of way.

Of the total sum, about \$225,000,000 a year will be allotted for regular federal-aid highways, \$150,000,000 for feeder roads and \$125,000,000 for urban highways. A rather half-hearted attempt to put federal aid on a 40-60 instead of a 50-50 basis failed.

As a result of developments during the war, 44 states are now prepared to match federal money through normal financing methods. Even so, it has been made easier for states to match allotments by giving them a period of five years to raise the money, instead of the previous three-year limit. The action of Congress seems to permit the launching of this ambitious proposal in 1945, as 45 of the biennial state legislative meetings are scheduled for that year. In addition to the main features of the plan previously mentioned, special annual allotments are made for forest highways, roads and trails, national park roads and access parkways. An attempt by the airway companies to have plane landing strips built along some of the highways did not meet with success.

Thus, highway transportation is assured of continued subsidies. In order to insure against the tax "burdens" of highway users being increased, an amendment was approved prohibiting the advancement of federal funds for roads in any state that diverts 10 per cent or more of its automotive taxes to non-highway use. This solicitude for highway users is in strong contrast to the attitude toward railway taxes. The states not only do

not provide right-of-way or any other benefits to the railways, but also divert considerable sums of railway tax money to the construction and maintenance costs of highways for the use of railway competitors.

More Work on Tank Cars

Crisis has followed crisis in the use, assignment and repair of tank cars since midsummer of 1942. So far, the railroads, in cooperation with the private companies which own the bulk of the cars, have managed to keep the existing fleets in condition to be used. Known retirements in the six-month period from March to November, 1944, were 1,500 cars—according to Deputy Petroleum Administrator Davies. Many of the cars now in service were fully depreciated on the owners' books and many of these were depreciated in a physical sense to an almost equal degree when they were pressed into use for petroleum movements to the East during the critical period in 1942 and 1943 when submarine warfare disrupted normal tanker movements. Further retirements may be anticipated. No new cars have been built.

The physical condition of tank cars and the attention which their maintenance required were studied in 1943 by the A. A. R. Mechanical Division and its findings showed that, in ten months, there were more than 640,000 tank-car set-outs for repairs. This figure represented an average of 5.05 per cent of the cars handled. The keeping of a national record was discontinued in October, 1943, and there are, therefore, no statistical data available which would indicate the present condition of this equipment. It seems obvious, however, that it cannot be improved appreciably under intensive utilization in the 14 months which have elapsed since the condition report was discontinued.

This means that the mechanical departments are again faced with another great test of their ability to keep cars in condition to meet the latest announced crisis. Late in November, Director Johnson of the Office of Defense Transportation stated that the country was faced with its "most acute shortage of tank cars." The Mechanical Division, at the same time, redirected the attention of the railroads and car owners to previously

The Congressional Transport Kitchen



issued instructions which were intended to accelerate the repair and return to service of this vitally needed equipment. Wholehearted cooperation will be needed in the emergency. Careful inspection and adequate repairs will insure that the cars are safe to operate, although many will agree with the statement of one general car foreman who declared that repairing many of the oldest cars was like "pouring money down a rat hole."

The situation will not be helped any by reflecting that the tank car situation has been acute for more than two years, that no new cars have been permitted to be built, that pipe lines, barges and tankers which have been built and whose supposed advantages were widely publicized have not lessened the acuteness of the tank-car situation. According to Colonel Johnson, 15,000 additional tank cars are needed at the present time. They cannot be obtained, so it is up to the railroads to make the existing 140,000 cars do the work of 155,000. Quicker turnarounds and increased train speeds are the answer, according to the O. D. T. Quicker turnarounds mean less time for inspection and repair; greater speeds demand that the cars be in a physical condition for high-speed service. No car supervisor needs to be told that he is on a spot in the face of these demands when, in 1943, defects on these cars averaged about 65,000 monthly. There will be no other answer than hard work which may very well require the 24-hour a day, seven-day a week schedule which has been suggested for repair points where tank-car movements are heavy.

Prosperity by Prohibiting Transportation

"I heard Assistant Attorney General Berge make an address before the Seattle Rotary Club, where he was discussing 'The Future of Competitive Industry in the Northwest.' He mentioned freight rates only in an incidental way, his main emphasis being placed upon the desirability of establishing manufacturing industries in this part of the country. He referred to the fact that wool from Oregon is shipped in the raw to Boston for cleaning, processing and weaving into woolen cloth, thence to Rochester, New York, for manufacture into suits and clothing, thence back to the Pacific Coast in the form of finished merchandise for sale to the wearer.

"He also mentioned the movement of copper from the Northwest to New England for manufacture into wire and other finished products, which again move back across the continent for sale to the ultimate user in this part of the country.

"I could not help wondering how such transportation across the continent and back, a distance of some 6,000 miles, would be possible under excessively high or discriminatory freight rates, and whether the way to accomplish Mr. Berge's apparent ideal of a self-contained economy in the Northwest would not be to blockade the trans-continental railroads, or at least raise the freight rate structure so that the products of each local region of the United States would also have to be manufactured and consumed there. Certainly, his picture at Seattle of wool and copper traveling thousand of miles in the process from production to ultimate consumption is inconsistent with his charge at Kansas City that freight rates are hampering transportation to and from the West."

—Vice-President Thomas Balmer, G. N., in a Pac. Coast Advisory Board Address.

Maintenance Costs

One of the fundamental problems of the maintenance of way departments of the railways after the war will be, by every means at their command, to reduce the run-away war-time costs of carrying out many roadway maintenance operations. In time of war, no one is surprised that costs increase. Wages are higher, the general experience and efficiency of employees are lower, work organizations are disrupted by shortages of manpower and by increased traffic interference, unseasonal deliveries of materials require unseasonable work, and overtime and other charges are amassed with what may appear careless abandon in order to hold labor and to get essential work done. These are the indirect costs of war. But when unit costs more than double, generally, and rise to three or four times what they were only a few years earlier, it is time to take stock of the situation. Even war-time earnings will not permit for long that kind of spending, and such costs will be prohibitive in the post-war period.

Analysis of the costs of rail laying operations on one large road, which has been noted for many years for its progressive methods, shows that the labor and work-train items in these operations have risen from an average of \$370 a mile in 1932 to approximately \$500 a mile in 1940, and to more than \$1,230 in 1943 and 1944—an increase of approximately 232 per cent in 12 years, and of 146 per cent during the last four years. Similar analysis of ballasting operations on this road shows that labor and work-train costs have increased from approximately \$550 a mile in 1932 to an average of \$860 a mile in 1940, to \$2,000 a mile in 1943, and to \$2,290 a mile in 1944, representing an increase of as much as 316 per cent during the last 12 years, and of more than 165 per cent since 1940. Add to these costs the increased costs of materials, and one gets a still more accurate picture of many war-time railway costs, in spite of constant effort to keep them down.

Through normal readjustments, this picture will change materially in the post-war period if further inflation is controlled. It must change. Regardless of what wages will be in that period, maximum efficiency must replace war-time makeshifts. Large-scale employment of track labor will still be required, but every employee will have to merit his job. Overtime will have to go, except in emergencies. The mechanization of work operations with new and improved designs of work equipment will have to be largely increased to improve the quality of work done and to hold down overall costs. And, still more important, many basic improvements to the track structure, from the subgrade up, will be necessary to build greater permanence into line, surface, gage and cross level, and thus lengthen the intervals between necessarily repeated work operations. The post-war period will be one both of learning and unlearning. New practices to cut costs must be developed and costly war-time practices must be abandoned—and promptly.

Load-Compensating Freight Brakes

Automatic load compensation on cars and tenders—
Manual adjustment of the locomotive to train weight

By C. D. Stewart

Chief Engineer, Westinghouse Air Brake Company

THE many and marked improvements in the air-brake equipment throughout the 75 years of its existence have had for their primary purpose the safer and more reliable handling of trains of ever increasing length, weight and speeds. It is of special interest to note that the majority of these improvements have had to do with accelerating the brake application through the length of the train. The brake equipments have been and still are of a type that deliver the same braking forces whether the vehicle on which it is installed is empty or loaded. There are, of course, a few empty-and-load brake equipments in use today, but they are for the most part on special cars in isolated service.

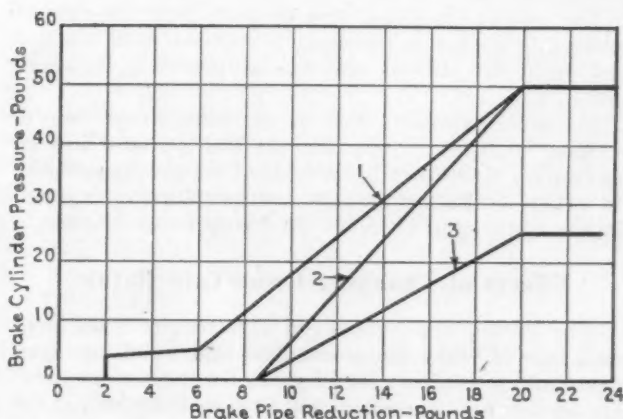
Obviously the operating results obtained with equipment of the single-capacity type are necessarily a compromise wherein the braking forces planned for the empty car are the highest that can be employed without bringing about serious difficulties of one character, in order that the braking forces on the fully loaded car are not so low as to introduce serious difficulties of another character. Considering first the adverse results of using excessive braking forces on a light car, we find them to be either a likelihood of wheel sliding or intolerable train slack shocks, or both.

There is no simple means by which wheel sliding can be avoided and, therefore, it is necessary to limit the maximum braking force to that which will not result in excessive wheel sliding under normal rail conditions. There are, however, several expedients which can be used to minimize train slack shocks and many of the improvements made in the air-brake operating devices throughout the years have had to do with one or more of these expedients. One of these has been the perfecting from time to time of the transmitting features of the triple valves, whereby the time of application of the brakes between the front and rear ends of the train has been greatly shortened. Another is the control of the rate of development of the braking forces, particularly during the first stage of brake application. A third involves the provision of more uniform braking forces throughout the train.

Serial Action Reaches Top Speed

The original success of the air brake was due, to a large degree, to the fact that with its use the brakes could be applied throughout the trains very much faster than had been possible with any other form of brake. By the use of the simple straight-air brake, trains of 15 cars were controlled satisfactorily for the first time. This was in 1869. The success of this operation stimulated the desire to haul longer trains and this desire was realized

Note—This article is an abstract of a paper presented on November 30 at a Railroad Division session of the annual meeting of the American Society of Mechanical Engineers at New York.



- 1—Empty brake cylinder pressures vs. brake-pipe reduction for any load condition
- 2—Load brake cylinder pressures vs. brake-pipe reduction with car fully loaded
- 3—Load brake cylinder pressures vs. brake-pipe reduction with car partially loaded

Typical Brake Cylinder Curves

with the production of the first plain automatic brake in 1873. Because the application of the automatic brake is faster than that of the straight air brake, it was possible to increase the train length from 15 to 25 cars. In 1887 the Master Car Builders' Association expressed the desire to haul trains of 50 cars, and invited any company that so desired, to supply a trial set of brake equipments that would control that length of train without severe slack shocks. During the next two years eight different companies submitted for test at least a dozen designs of brakes. Not one of these submitted met the stipulated requirements. In fact, after the first few trial runs, some of the manufacturers resorted to electric control of the brakes in an endeavor to avoid severe slack action.

As the road trials were drawing to a close, without any satisfactory brake being demonstrated, Mr. Westinghouse conceived the idea of speeding up the transmission of the brake application by causing each triple valve to create a local discharge of brake-pipe pressure. This local reduction augmented the reduction at the brake valve on the locomotive and thereby relayed the desired action serially throughout the train. The valve embracing this feature came to be known as the quick-action triple valve, and by its use 50-car trains were controlled very satisfactorily.

This quick-action feature was operable only for the emergency application of the brakes and it was soon realized that if this same local venting feature could be added for the service application, still longer trains would be made possible. Accordingly, after extensive research the quick-service feature was developed and introduced in 1905. By means of this improvement, train lengths were increased to 80 cars.

Finally, after the most intensive research yet undertaken, the quick-action and quick-service features were very materially improved and in 1933 the AB valve containing these improved features was placed in service on

the American railroads. In this valve the quick action transmission speed was increased approximately 50 per cent over that of its predecessor. This transmission speed is close to that of sound which, in the light of today's knowledge, appears to be the ultimate. Thus we see that during 75 years the speed of pneumatic transmission of the brake action through the train has experienced five major advancements and the transmission speed now employed appears to be the maximum attainable.

The second expedient, that of controlling the rate of generating the braking forces, is a relatively new function and must, for obvious reasons, be limited in its application.

The third expedient, that of providing more uniform braking forces is the one that has had the most limited application of all three to date. It offers great possibility for expansion during the next transportation cycle, comparable to that just cited for the transmission function.

Effects of Changing Gross-Tare Ratios

Why do the new lightweight cars require a different basic type of brake equipment than that which has been apparently satisfactory for 75 years for the heavier cars? The answer to this question will be clear if we look at the present basic type of brake equipment in the light of changes in car construction over the years.

Freight cars at first were all wood; later steel underframes were substituted, and still later many cars were made entirely of steel. And yet throughout all these changes the gross to tare ratio of these cars remained in most cases substantially unchanged. It follows that throughout this same period the basic braking ratios for the empty and loaded freight cars held closely to the same spread. Years of experience with these maximum and minimum braking-ratio limits shows that with the maximum limit for the empty car, wheel sliding has not been excessive and train slack action has been tolerable, and with the minimum limit for the loaded car the control of trains on grades has been safe.

For some time now there has been a tendency to increase materially the load-carrying capacity of certain cars by means that only slightly increases their empty weight, and in order that the loaded braking ratio may not be lowered, permission was granted by the brake committee of the A. A. R. to raise the empty braking ratio from 60 per cent to that percentage necessary to insure a safe minimum ratio but in no case might the maximum empty braking ratio exceed 75 per cent. In this decision you will recognize a farther compromise made in an effort to keep the brake equipment in its simpler form. This increased spread in braking ratio between empty and loaded cars obviously increases the problem of controlling train slack action.

During this same interval of time the locomotive weight has been greatly increased and the size of the tenders and their load-carrying capacity has increased in even greater proportion. As a result we have a situation wherein the differences in gross to tare ratios between the cars in the train, and between the train as a whole and the locomotive, are continuing to grow. Picture a heavily loaded train drawn by such a locomotive having a temporary low fuel and water supply. Under these conditions the braking effort on the train will be a minimum, and that on the locomotive will be a maximum, thus setting up a condition for creating heavy strain between the locomotive and the train that can produce shocks harmful to the lading. This condition is sufficiently common that it is widespread practice for the engineman to work steam when first applying the brakes in order that the effective-

ness of the locomotive brakes will correspond more nearly to that of the train brakes.

On the other hand, the reverse of this condition is obtained when the cars of the train are empty and the locomotive tender is loaded to capacity. Because of the skill on the part of the locomotive enginemen controlling the locomotive's braking forces whenever this is possible, and because of a new feature incorporated in the 8-ET and the AB brake equipments that has for its purpose the building up of brake-cylinder pressure during emergency applications, the slack adjustment is controlled.

In spite of the expedients just cited, it is obvious that the wide spread in braking ratios is not ideal. However, operating troubles have not been sufficient to cause too much concern with existing cars and locomotives. Now, however, with the railways planning to meet the anticipated keen competition in the transportation field following the war's end, by the use of lighter cars and higher operating speeds, the resultant, additional spread in braking ratios on the lightweight cars will be beyond the capacity of the single-cylinder brake equipment. This is true both from the standpoint of holding the maximum and minimum ratios within the present acceptable value and from the standpoint of stopping the trains of such lightweight equipment from higher speeds within most present-day signal spacings.

The Variable-Capacity Brake

This situation can best be met by the use of a variable-capacity brake of a type that automatically compensates for an increase in the loading. This new type of equipment employs a double brake-cylinder arrangement to provide a maximum braking force of, let us say, 60 per cent of the light weight of the car, a minimum braking force for the fully loaded car of between 20 and 30 per cent, and an intermediate braking force rather close to the maximum for cars partially loaded. Because in the high-speed type of freight, the cars are likely to be loaded to some intermediate capacity, this latter feature will be beneficial in offsetting the increased energy that results from the increase in train speed, it being remembered that this energy increases as the square of the speed. Examination of three typical weight classes will be sufficient to show the marked differences in braking ratios with single-capacity brake and with the load compensating brake. These are shown in the table.

The Range of Braking Ratios of the Variable-Capacity Brake

Empty wt., lb.	Axle load limit, lb.	Gross to tare	Empty ratio, per cent	Single-cap. braking ratio, per cent	Optional per cent-age of load compensating brake
50,000	169,000	3.38:1	75	22.8	50
			60	18.5	
40,000	169,000	4.2:1	75	17.7	44
			60	14.2	
30,000	169,000	5.92:1	75	13.3	33
			60	10.8	

Next let us consider the stopping distance of a train of present standard-weight cars braked with the present standard single-capacity brake, and a train of proposed lightweight cars equipped first with the same type of brake and then equipped with the load-compensating brake. For a given speed and lading the stopping distances will be in substantially direct proportion to the braking ratios of the cars. If the first train stops in distance X, the second train will run $X + 12$ per cent (12 per cent further), and the third train will run $X - 30$ per cent. Saying this another way, the third train can operate at 20 per cent higher speed and yet stop in the same distance.

Now this illustration has to do with a change in the braking equipment on the cars of the train only. It will

be of interest to consider the benefits to be gained from the use of similar modified equipments on the tender and the engine of the locomotive. On these two elements of the power unit different means for regulating the braking forces must be employed as well as a different means for measuring the conditions that establish the need for the change.

Harmonizing Engine and Train Brakes

A typical modern tender for a freight locomotive weighs about 147,000 lb. when empty and 390,000 lb. when loaded, with 22,000 gallons of water and 30 tons of fuel. The gross-to-tare ratio is, therefore, 2.66 to 1. The average tender is braked at about 100 per cent of its light weight. It will be apparent that when this tender is associated with a fully loaded train, even the lowest braking force is much higher than that on the cars. However, when it is associated with an empty train, there is only one value of water and fuel load wherein the braking ratio will be the same as that of the train.

It is apparent that if the braking ratio on the tender were to be held substantially constant despite the fluctuating load, then the matter of further adjusting the braking force to correspond closely to that of the train would be a relatively simple matter.

As to the braking forces on the engine portion of the freight locomotive unit, it is a frequent practice to omit brakes from the non-driving wheels and limit the braking force on the drivers to a rather nominal amount. The engine as well as the tender braking ratio will coincide with that of the train for one condition of loading only. Furthermore, the locomotive weight does not fluctuate. Therefore, it is a relatively simple matter to have the braking ratio on the locomotive adjusted to correspond with that of the train.

The benefits derived from providing locomotive braking forces more in keeping with those on the train vary with operating conditions, but in general it is safe to say that stopping distance will be improved, slack action will be less, and the locomotive engineer will not attempt to compensate for unequal braking through the expedient of keeping the throttle open during braking or holding the engine brakes released. Examples of the stopping distance and difference in drawbar pull under the two methods of operation will be of interest.

Assuming first the conventional train of 75 cars cited above and the engineer working steam in accordance with wide-spread practice, the drawbar pull between the locomotive and the train will be on the order of 15,000 lb. Assuming next the train of lightweight cars, but leaving all other conditions unchanged, the drawbar pull will be 13,000 lb., and when the load-compensating brakes are substituted, the drawbar pull will be increased to 30,000 lb. Now, to the locomotive brake equipment of this third train add the load-compensating brake to the tender and the brake-force adjusting relay to the engine and thereby adjust the locomotive braking forces to correspond with those of the train. The drawbar pull will be reduced to an insignificant amount and the stopping distance will be slightly lowered.

Principles for Adjusting Braking Forces

The figures just cited are for a loaded train. The manifest train is of interest also because it is the type of train that will likely be operated at higher speeds. The relative stopping distances of these manifest trains under similar conditions, discloses a similarly interesting comparison.

The first principle involved in adjusting braking forces is that the mechanism for setting the car braking ratio to correspond with the car loading must be operated automatically, for obvious reasons. The setting must take place when the car is stationary, and then the measuring device must be out of engagement with any part that can vibrate as a result of the car's motion. This is for the dual purpose of avoiding a false registration and of avoiding unnecessary wear. The mechanism for setting the tender braking ratio must, on the other hand, be in continuous registration with the weighing device because of the fact that the tender weight varies continuously. This adjusting mechanism must likewise be automatic.

The mechanism for setting the engine braking ratio must, however, be manual because there is no simple means for registering on the locomotive the load on the cars. The manual adjustment in this case is not a difficult one to make and since it needs to be made but once per trip, it is simpler than most of the tasks performed on the locomotive by the engineer in preparation for his departure.

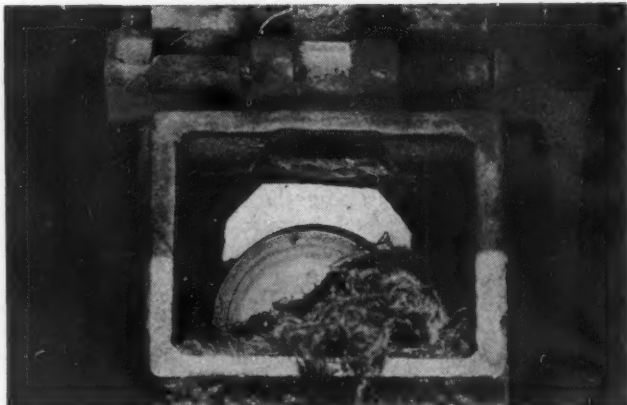
The Weighing Mechanism

The weighing and adjusting devices for both the car and tender brake equipments are automatic in their operation. For the car the weighing mechanism performs its function once only at the time the car is being loaded or unloaded. The weighing mechanism is then disengaged and thereby the car body vibration enroute can not give a false reading or wear out the equipment prematurely. It is easy to limit the weighing cycle in this manner by taking advantage of the fact that during loading and unloading operation the air pressure in the brake pipe is vented. When the locomotive is coupled to the car and the air brake equipment is being charged, the weighing mechanism is caused to function during the rise in air pressure from atmospheric to 35 lb. Any pressure above this value automatically disengages the weighing mechanism. During the interval that it is gauging the weight of the car, it adjusts the load-compensating valve to the proper ratio, and when the weighing mechanism is disengaged the compensating mechanism is locked in its proper setting. During braking operations the "empty" brake cylinder operates first and, if the car is empty to about one-fourth loaded, it is the only brake cylinder to operate. As the load is increased from one-quarter of capacity to full load, the "load" brake cylinder follows the empty brake cylinder in its application of the brakes and adds the correct braking force to that of the empty cylinder, to the end that the braking forces on the car are uniform within practical limits throughout the range of loading.

The brake equipment on the modern high-capacity tenders can be of a type very similar to that just described for freight cars. Like the freight cars, the spring deflection may be used to adjust the braking forces in accordance with the constantly changing load of fuel and water. A better method is to use a mechanism for weighing the water. Preliminary investigation of this means indicates that it is very accurate and it is easier to do mechanically than to weigh by the spring deflection because of the wheel arrangement employed on the large-capacity tenders. Because the braking forces for a loaded tender will be high, there is a distinct advantage in using the high main-reservoir pressure for braking purposes. Fortunately, this is easily accomplished from the locomotive air supply and the resultant reduction in brake-cylinder sizes is very advantageous.

(Continued on page 1000)

Overcoming Waste Grab Trouble



Disturbed Condition of Packing Caused in Switching—Waste Grabs Frequently Develop from Such Conditions

By B. R. Jones* and P. J. Hogan**

IT is well known that there have been no great changes in the type or style of friction journal bearings for railroad cars and locomotive tenders in the past 80 years, except where slight changes have been made in dimensions to accommodate larger loads and faster train schedules, and in the addition of a soft metal lining. These changes have not solved the problem of preventing waste grabs and, in spite of every precaution, we still have them.

For purposes of review, the following is a partial list of some of the causes of hot boxes: waste grab; rolling waste; packing not in contact with the journal; too much packing; packing caked or glazed; boxes improperly packed; insufficient packing; time between periodic packing dates too long; boxes packed too tight; loss of oil through use or leakage; packing too dry; poor quality of packing; wiping on edge of bearing caused by lining spread; wiping by trapped waste in lining grooves; wiping by waste jam at bearing top in box; wiping caused by waste ledge projection in box; improperly saturated waste; improper oils; abrasive matter in packing; defective or broken bearing; improper application of bearing lining to shell; shelled out lining; cracked lining; concentrated pressure due to uneven bearing; wrong bearing size for journal; lining worn out; overload on bearing; improperly finished bearing surface; excessive journal taper; improperly finished journal; truck out of square; bolster guides and columns worn; water or ice in box; top of wedge not having proper bearing in box; distorted or broken wedge; broken journal box; crown of box worn hollow; careless workmanship in assembling trucks; careless handling of journals and lack of protectives; flat, rough and badly worn wheels and wheels out of round; rough track surfaces; rough handling in switching; rough handling in road-haul trains; excessive journal-bearing tilt; excessive journal-bearing roll between box stops; improperly maintained machinery in manufacturing and finishing of axles and bearings; worn or broken dust guards.

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New Haven-designed journal bearing has given trouble-free passenger-train service for ten years — No hot journals from waste grabs — Freight-car applications satisfactory

It has been estimated that at least 70 per cent of all hot boxes result from waste grabs. The large percentage of failures directly chargeable to these grabs led our mechanical department into a campaign to find out just what caused waste grabs and to try to correct the condition before the hot box developed. No practical answer had been obtained up to 1935 to stop waste grabs during ordinary handling of cars.

A careful study of photographs of action in journal boxes during switching shows the necessity of stopping waste grabs by preventing waste from coming in contact with the journal in the "danger zone," that is, at the lower edge of the journal-bearing lining metal and the journal proper. A study shows that there is sometimes a three-way movement of journal bearings relative to a fixed center line of the axle. These movements may be upward which causes a lifting of the bearing off the journal; or, there may be a tilting action; or, a forward or backward movement of the bearing relative to the fixed ends of the car.

In any case it is easily seen that when, for any reason, the bearing is moved from its normal position an aperture is opened which can trap any loose ends of waste that may be near its lower edge. As this opening becomes larger it tends to grab the waste which is then carried between the bearing lining and the journal.

Attacking the Problem

It is a well-known fact that when a new bearing is placed on a journal the area of the bearing that at first actually carries the load is limited to a fraction of the total bearing surface. This area is usually about one inch wide in the center and extends the entire length of the bearing. This means that there is a larger opening at this time between the lower edge of the lining metal and the journal surface than exists after the bearing wears in and settles on the journal. This condition is, of course, more pronounced after a journal has been reconditioned because of the smaller turned diameter of the journal.

It was felt that any device used to overcome this grabbing tendency should be simple, have no moving or removable parts, should be a part of the brass itself, should not be too expensive, and should not require any additional labor for inspection or maintenance.

Wipers intended to remove foreign matter that might cling to the revolving journal were investigated. They not only removed the foreign matter, but wiped the oil off the journal surface and caused a failure on the first trial during switching operations in the make-up of the train at the terminal. This test demonstrated to us that it would not be a good thing to have anything rub directly on the journal because of the danger of removing the necessary lubrication from the journal as well

as the danger of having a wiper deface the smooth surface of the journal itself.

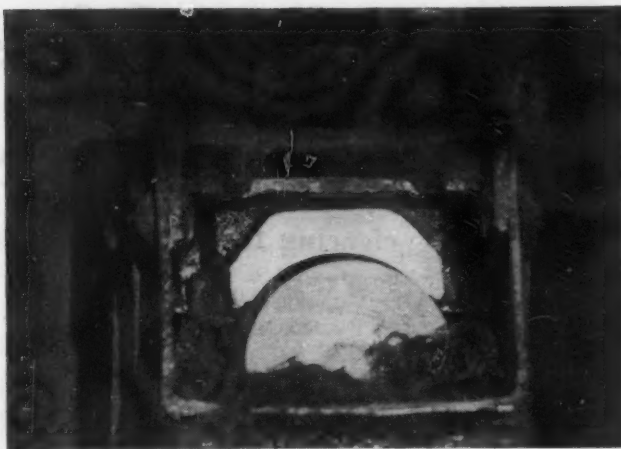
Photographs show that, with a standard A. A. R. brass, when the waste starts to roll on the rising side, it goes up against the lower underside edge of the brass and remains in the "danger zone" where lint, loose ends, and sections of waste can be grabbed and pulled under the lining of the brass and on to the journal proper. We felt it necessary, therefore, to find some means to move this rolling waste away from the journal and toward the side of the box to eliminate the possible danger of grabbing.

A journal bearing was designed which had two integral extensions, one on each side of the brass, extending its full length. These extensions were located so as to allow about $\frac{1}{8}$ -in. clearance at all times between the journal and brass and to project about $\frac{1}{2}$ -in. below the under side of the brass. These projections add considerably to the structural strength of the brass, prevent rocking and definitely stopped waste grabs in regular switching and road operation. With the build-up of train speeds, the eddy current of air created between the journal and the integral extension ledges along the sides of the bearing diverts lint to the box side. This accumulation is in evidence on high-speed trains. Further, the extended deep sides prevent rocking and guide the bearing to its natural position on the journal.

Proving that these brasses would stop waste grabs under all operating conditions was our next step. In 1935, eight new 5-in. by 9-in. modified A. A. R. brasses were made incorporating the two integrally-cast waste-repelling ledges. These brasses were placed in test service on a dining car. Journal boxes were packed to the full center line of the journal to aggravate the tendency to waste grab. A nine months' test period followed and no report of any waste grab was received. These added waste-deflecting projections actually repelled the rolling waste away from the journal toward the sides of the box.

After the original test, approval was given for further applications to other cars. About March, 1937, 48 special brasses were applied to four more dining cars. About June, 1937, 200 special brasses were applied to fifteen streamline passenger cars and to four standard passenger cars and one dining car, all with 5-in. by 9-in. journals. In June, 1938, 400 special bearings were applied to 50 new streamline passenger cars. Up to about September, 1942, these fifty cars ran over 150,000,000 box-miles without a single failure due to waste grab or hot box. An additional 50,000,000 box-miles were added up to September, 1943, without any sort of failure.

An outside laboratory test was made in 1938 to check our findings that this bearing would stop waste grabs. Arrangements were made with the Magnus Metal Corporation to run a series of tests on their special testing machine. The findings were: "These test runs did not



A Waste Grab Developed After the Bearing Raised from the Journal at Yard-Switching Impact Speed

result in a waste grab and the special design of the bearing with its extending ledges did turn the waste away from the journal when the waste was moved to contact with the ledge."

In 1940 fifty new caboose cars were built on which standard A. A. R. bearings were applied. After a short time these bearings were running hot, and waste grabs were developing because the cars were used on a section of road where pusher engines were employed. These brasses were removed and replaced with the special brasses, and all of them are still operating without a hot box from any cause.

We were having considerable hot-box trouble on locomotive tenders. Tender hot boxes are seldom heard of since we have applied the special brasses.

In June, 1939, it was reported that there had been no trouble of any kind from the 648 special brasses then in service. Tests continued until May 1, 1942, with no running hot or any demonstrable failure chargeable to these bearings.

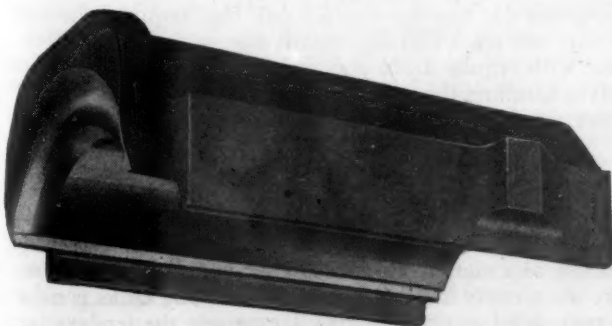
These bearings were adopted May, 1940, as standard on passenger cars and locomotive tenders having A. A. R. standard axles. This action was taken because it seemed definitely proved that this bearing had greater durability, gave better lubrication and prevented waste grabs.

In January, 1940, 2,000 additional special bearings were applied to 250 self-clearing twin hopper cars which have a capacity of 120,000 lb. each. A careful performance record has been kept on all these cars and in two 15-month repack periods not one hot box has been reported due to waste grab.

In May, 1941, 8,000 of these bearings were applied to 1,000 new 60-ton box cars. No exact record was kept of the large mileage covered by these cars which gave trouble-free operation with no hot boxes reported due to waste grabs for two 15-month periods. None of these hopper or box cars have ever appeared on a train or car-performance sheet with a hot box since they were built.

Some of these bearings have been removed when wheels were changed but they are few in number. Emergency brasses have replaced the special bearings found defective at the time for periodic repacking.

A policy has been adopted of not relining any passenger- or freight-car brasses. Experience has shown that many times a hidden flaw will exist in a brass and may be the cause of an early brass failure when it is put under the stress of operation. The added cost of new bearings over relined ones has been well-justified by an exceptionally good record.

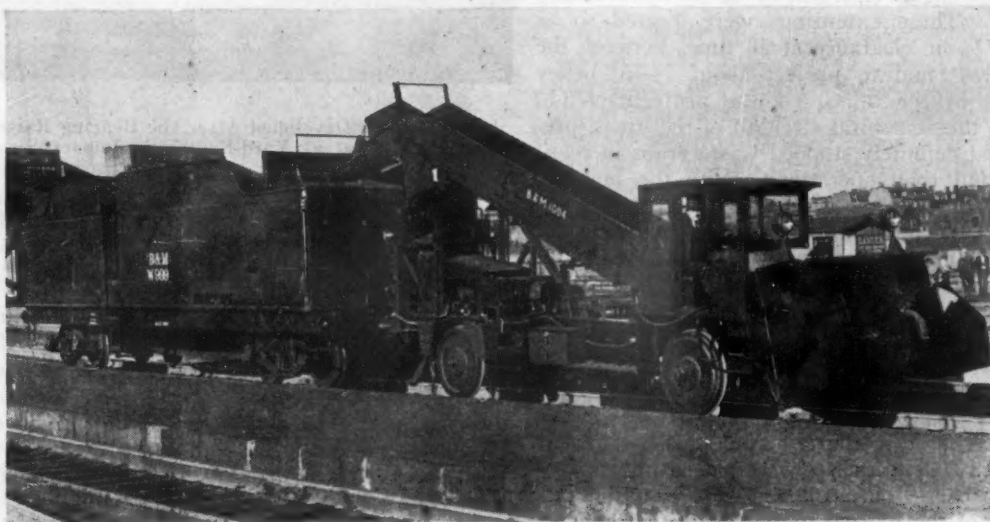


A Bearing Which Incorporates Waste-Repelling Ledges

Melter Simplifies Snow Disposal

Self-contained track-mounted outfit developed for use on B. & M. at Boston proves value as means of clearing tracks and platforms during heavy storms

By T. G. Sughrue* and L. Richardson†



Fox Loader and the Converted Engine Tender into Which Snow Is Dumped for Melting

DURING the past two winters the Boston & Maine has employed with highly satisfactory results a portable, track-mounted snow-melting device for disposing of snow at its North Station, Boston, Mass. Pushed by a locomotive, which also furnishes steam for melting the snow, the equipment consists of a snow-melting tank, converted from an engine tender, and a loading device by means of which the snow is picked up from the track and deposited on a conveyor that discharges it into the melting tank. This equipment has many advantages as compared with the methods of snow disposal that were used previously at this location.

Former Method

The removal of snow from intensely congested areas, such as the platforms and tracks at large passenger stations, has always presented a difficult problem. The necessity of keeping traffic moving has made it difficult to obtain needed working room, especially during rush periods, resulting frequently in the elapse of considerable time between the end of a storm and completion of the snow-removal work. In general, the method employed to clear away snow at passenger stations has been to collect it into piles or windrows on the platforms or between the tracks until the storm ends, after which the task of removal begins. Unless reasonably rapid progress is made, a second storm may pile on top of the first one, possibly resulting in train delays.

In removing the snow by this method, the occupancy

of tracks in pairs is usually required. On one track is placed the cars for receiving the snow, while the other track is occupied by the snow-loading equipment. The necessity of using the tracks in pairs means that many changes must be made in assigning tracks to incoming and outbound trains. These take planning and time. Much time is also lost in transferring the snow-handling equipment from one pair of tracks to another; while this is being done, three or four tracks are out of service. This is a severe operating handicap. When the cars have been loaded with snow they must be moved to the nearest convenient unloading point, and another set of empty cars must be secured and sent to the station for loading. Unloading equipment must also be available at the point of disposal.

With these considerations in mind, the B. & M. made a study of the problem, which led to the development of the snow-melting outfit. This equipment satisfies the requirement for a self-contained unit that requires the use of only one track and that entails a minimum of interference with regular train operation. Moreover, its use involves handling the snow only once instead of the several times required by the previous method.

The Equipment Described

The first snow-melting outfit was constructed in 1941. In addition, a second unit has been completed recently for use as a stationary snow melter in the yards at Boston. As already indicated, the snow-melting tanks consist of remodeled engine tenders. To convert the tenders for this purpose, they were each divided into two principal

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When Melting Tank Has Become Filled, It Can Be Emptied Quickly by Means of Large-Capacity Dump Valves

compartments or tanks, one of which, the smaller is used for heating the melting water, while the larger one is the melting tank. Steam from the locomotive, piped through a flexible connection to the snow melter, is used for heating the melting water. In the original unit the heating tank was divided into two compartments which were used alternately, but in the stationary melter one of these was eliminated when it was found that a single compartment provided sufficient heating capacity. The installation of an oil burner in the heating tank is being considered as a possible auxiliary method of heating the water, but this idea has not yet been fully developed.

For picking up the snow and elevating it to the melting tank, a Fox snow loader is used. At its forward end, this machine, which is mounted on four flanged wheels, has a pick-up device consisting of a set of circular revolving knife blades that cut into the snow, breaking it up, and at the same time throwing it backward and inward toward the center of the track. In this action the snow is deposited on the lower end of an inclined endless conveyor, fitted with cross slats, which elevates the snow and dumps it into the melting tank. Both the pick-up device and the conveyor on the loader are driven by a gasoline engine. When the snow-melting outfit is assembled for operation, the three units comprising it, namely, the snow loader, the melting tank and the locomotive, are arranged in that order.

The Melter in Operation

When a heavy snow storm occurs, the melting equipment is placed in operation shortly after the snow begins to fall. As the first step, sweepers and snow plows start work on the platforms. Instead of piling the snow into a center windrow on each platform, they throw it onto adjacent tracks. This permits the pick-up operation to start when the snowfall has reached a depth of only two or three inches. Getting this head start on a storm is an all-important factor in keeping ahead of the snowfall and preventing train delays. Since the melter requires only one track, it can start work on any open track or it can follow in on any track and remove snow from the outer platforms.

When snow drops into the melting tank from the conveyor it is melted almost immediately. Steam is drawn constantly from the locomotive to heat the water and permit rapid melting. Since 10 gal. of snow make 1 gal.

of water, it can be seen that a capacity of 10,000 gal. in the heater will accommodate 100,000 gal. of snow—about 13,500 cu. ft. With the snow converted into water, its disposal is a simple matter. At North Station this is done by dumping the water into the Charles river nearby. Large valves are located on each side of the tender permitting a full tank to be emptied in a minute and twenty seconds. In fact, some dumping has been done with the equipment in motion. The cost of the fuel consumed in melting snow with this equipment is but a fraction of a cent per cubic yard. Because of the faster and relatively continuous operation inherent in this method, the operating costs are much less than for previous methods.

How It Works

In the operation of the melter, the heating or smaller tank is filled with water as the unit starts into service. To heat this water, steam drawn from the locomotive is discharged directly into it, thereby eliminating the need for considerable piping. When the snow removal area is reached, the communicating valves are opened and the water is permitted to flow from the heating tank to the melting tank, the levels in the two compartments equalizing. As snow is dumped into the melting tank the water level rises, part of it backing up into the heating tank. This continues until both tanks are filled. Only enough steam is introduced into the melting tank to produce circulation and prevent the snow from piling up. When this tank becomes filled, the temperature should be close to 32 deg. F., so that no heat is wasted. At this point the communicating valve between the two tanks is closed and heating is continued uninterruptedly in the heating tank. Then, when the melter unit reaches a convenient location, such as a bridge, the dump valves are opened and the melting tank is emptied. When the dump valves are closed, the communicating valve is opened permitting hot water to flow from the heating compartment into the melting compartment, and the loading and melting operations are repeated.

In the operation of this equipment at North Station, not only is less locomotive time consumed than before, but the need has been eliminated for at least 30 gondolas, as well as the unloading equipment and considerable manpower.

* * *



Women Passenger Representatives Now Serve the Principal Stations of the St. Louis-San Francisco

In the picture, from left to right: the Misses Jerry Ketchum (Tulsa); Edith Walters (Kansas City); LaVita Shelton (Oklahoma City); Mary Rose Natsch (Dallas); and Mrs. Margaret King (St. Louis)

Management-Employee Relations

The responsibilities of labor and management on a railroad are discussed from management's viewpoint

THE training of employees—from the top executive down through the various levels of responsibility to the office boy or apprentice—is perhaps the biggest single task facing the railroad industry today. This issue is a challenge to the responsibility of management and labor.

Let us examine some of these responsibilities, for if labor understands management's responsibilities and management understands those of labor the task will be easier and we will have greater chance of success.

Perhaps the most difficult responsibility for labor to understand is a railroad's responsibilities to its security holders. We all know that we are dependent upon the security holder for our jobs. If he had not advanced money to the railroad, there would have been no property—and without rights of way, tracks, equipment and terminals, there would be no railroad jobs. Who are some of these security holders? Many railroad employees themselves, widows, charitable institutions. In 1943 about three billion dollars worth of such securities were held by insurance companies in which most railroad employees have a stake. The security holder is the keystone of our type of democracy. His capital is working for the railroad in the same very real sense as you and I.

What pays salaries and wages is *income*—not capital. Income results from the application of labor to capital. Without labor, capital is completely useless and without capital, labor has no power to earn. If management does not satisfy the security holder that his capital investment is being wisely administered, management is through—washed up—and so perhaps is the company. The better job management does to satisfy the security holder as to the efficiency and profitable nature of the business under its guidance, the better position it will be in to engage in a systematic program for improving labor conditions. We all too frequently overlook the fact that payments made to security holders are merely rent for the use of the plant, equipment and tools which their money has purchased.

Responsibilities to Labor

The second concept is management's responsibilities to labor, and they are many. Some of these responsibilities to labor have come to be well recognized in the railroad industry. In this cate-

Note—This article is an abstract of an address in a course sponsored jointly by the Boston & Maine R. R. Y. M. C. A., the Massachusetts Division of University Extension, the Standard Railroad Labor Organizations, and the management of the Boston & Maine.

By L. W. HORNING

Vice-President, Personnel, New York Central System

gory would fall management's responsibility to enter into collective bargaining with the chosen representatives of its organized employees.

A second responsibility of management to labor is the obligation to pay fair wages. In determining what is fair, management must naturally take into account a million and one different things. Wages must be such that they serve as a continuing incentive to self improvement on the part of employees. They must serve to attract promising new talent and they must be sufficient to retain such talent after it has been put to railroad work.

There is another and analogous responsibility. That is the assumption of responsibility as nearly as possible for security of employment—or stability of employment. There are few industries where the man or woman who does his duty well, who is willing to work hard and to learn has the employment security which we find in our industry. This is a most difficult job for railroads, because the volume of traffic, from which a railroad derives its revenue, has a tendency to increase and decrease at different times of the year, resulting in varying requirements for personnel.

Decent Surroundings

Management must take the responsibility of providing a place to work which will be calculated to bring out the best in an employee. It must recognize its responsibility to provide decent, sanitary places to work, with such conveniences as are proper and necessary. Good lighting, good ventilation, locker facilities, toilets, etc., are important, but again the facilities which a railroad can equip and maintain are measured by its ability to pay for them.

Personnel Policies

Management and labor alike have the responsibility of promoting good labor relations. In the long run good labor relations boil down to two simple conditions; management must like and understand the employees and the employees must like and understand management. Therefore, the establishment and maintenance of foresighted personnel practices which will have a tendency to develop this mutual regard and respect are the responsibility of every manager.

Countless factors may influence em-

ployee morale for better or worse, but the following practices are suggested as important for good personnel relations: 1. The prompt payment of wages. 2. Modern employment methods—selection—interviewing—placement. 3. The practice of informing employees about their job performance—both successes and failures. 4. Opportunity for advancement. 5. Fair working hours and starting times. 6. Social and recreational facilities. 7. Leave of absence practices. 8. Personnel counseling. 9. Methods of handling grievances. 10. Medical and health programs. 11. Employee savings and thrift plans—encouragement of credit unions. 12. Pensions—group insurance—sick benefits.

A Plan Is Needed

A recent report of an A. A. R. committee points out that personnel policies are simply a "plan of action." It is important that management have such a plan and that every supervisor know it well. The goal aimed at and the means of achieving it must be carefully developed, then made crystal clear to everyone whose help is needed for attaining it. Employees, no less than supervisors, must know what the goal is and how it is to be attained. Such knowledge is necessary if we are to avoid friction and misunderstandings, wasteful duplication of work, omissions, delays and lost motion.

In the railroad industry both parties have a duty to maintain the democracy which for long years has characterized our relations. The Railway Labor Act provides for the open shop, as American as Plymouth Rock. We, as a people, have never wanted anything forced upon us—and I don't believe we ever shall. I think labor can be strong without a closed or union shop. Men should join a union because they want to, just as a man is willing to join a political party because he wants to and not because he must join to earn a livelihood in the manner of his choosing.

In order to secure better labor relations it is management's duty to inform labor in advance of changes in policy regarding the labor force, conditions of work, etc. Management cannot and should not take any part in union affairs, but it can and should take labor into its confidence when it plans major changes in operation—policies or practices affecting the welfare of employees.

Labor is responsible to its membership, to the industry and to the public for the businesslike conduct of its affairs. Unless this responsibility is accepted, labor's contribution to society will always be limited. And the job is one

which no one else can do for labor. Labor racketeering, jurisdictional disputes, wildcat strikes, broken contracts—all these must go.

What I consider far more important from the standpoint of labor's responsibility is the need for more effective cooperation between management and labor. *Management has the duty of entering into collective bargaining, but it is the joint responsibility of labor and management to make it work.*

Incidentally, I firmly believe that collective bargaining as we know it is gradually being destroyed—and largely as a result of the efforts of friends of the practice to promote it. Paradoxical as this may seem, here is what I mean. When management and labor are permitted and required to settle differences around the conference table they accept the responsibility of working out a solution of their own problems. However, if a government agency is also involved in the problem—and this government agency has the final say—the parties to collective bargaining, human as they are, and with all the weaknesses of human beings, are less likely to discharge their responsibilities. When we let someone else settle our problems for us, nine times out of ten one or both of us will be more or less dissatisfied with the result. When this state of mind exists among management and labor representatives collective bargaining, as we know it, becomes a farce. What we need more than anything else is less interference by outside tribunals, no matter how good their intentions may be.

The first prerequisite to successful cooperation is an understanding on the part of labor that the future of the industry is labor's future. The second prerequisite is the recognition by both management and labor that our industrial system is constantly changing and that our policies must be developed to meet the changes which are occurring. To insist on the status quo is an easy solution but such insistence precludes progress. Neither labor nor management can forever insist upon the "never a backward step" policy—*collective bargaining cannot operate on a one-way street.*

"Cupola Laws"

There are many restrictions on the industry which have completely outlived their usefulness. Typical examples are the so-called "Cupola Laws" in certain states which provide that each caboose used in road service be equipped with a cupola. Such cupolas are costly for the railroad to construct and maintain—and they are generally as useless as a third wheel on a bicycle.

The third prerequisite is the acceptance by both management and labor of the long-term viewpoint in carrying out collective bargaining. For example, the effect of one rule may appear to be to labor's advantage, but it in turn may restrict the opportunity for a second advantageous rule. If labor imposes a make-work rule, which increases the cost of doing business, it cannot also expect a

wage increase. Unions must recognize that working rules which increase employers' costs serve as a limitation on their members' wages.

Both labor and management must become conversant with the "price-volume" principle and its effect on labor. Management must be prepared to tip the scales toward labor when doubt exists as to whether to adopt a low price-high volume policy or a high price-low volume policy. Whereas either may return the same profit to the company, the low price policy will lead to greater employment—but management cannot maintain such a policy alone.

There must be a realization on the part of labor that cooperation does not involve an invasion of the field of management. The desire on the part of labor to take over some of management's prerogatives is everywhere apparent. For successful cooperation on a long-term basis there is need also for recognition on the part of the unions that restrictive working rules, which may appear completely fair in themselves, may amount in the aggregate to such a burden on management that they limit the employers' essential prerogatives.

Service to Public

Both management and labor must assume a very real responsibility to the public in furnishing a service that is efficient, economical and safe. Nowhere is cooperation more important than on the railroads, where a suspension of operations ordinarily affects the public more directly and to a greater degree than do similar interruptions in most other industries.

The manager is responsible to government authority which interprets the will of the public. This responsibility imposes restrictions on his activities. For example, he may not abandon a branch line of track which is losing money without first receiving the authority of the proper regulatory body. Under present conditions, he may not raise the pay of an employee without Government approval.

Labor has similar responsibilities to the public at large. Labor's "no-strike" pledge during the war emergency is an example of a responsibility accepted in the public interest. These responsibilities are compelling even though they may appear to be contrary to the best interests of the company or its employees.

Another situation which calls for the highest type of joint cooperation is the problem of assimilating the returning veteran. This, perhaps, is as much a responsibility to the public—the country—as it is to the veterans themselves. Also in connection with the veteran there will arise problems in placing those who are no longer physically able to go back to their former work. It is the responsibility of labor and management, working in concert, to provide ways and means for assimilating such disabled veterans in other jobs for which they are suited, without loss of seniority right if that be possible.

What can labor and management do in the field of competition?

Dealing with Competition

First we must all accept the principle which is truly self-evident, that successful competition—with trucks, with buses, with the waterways and airlines, and with the private passenger car—is the keynote of a successful railroad industry. When there are two or more ways of traveling between two given points the traveler must reach a decision as to which he will use. Three factors which are paramount in his mind are (1) cost, (2) comfort and (3) speed or frequency of service. In the shipment of freight the determining factors are apt to be cost, speed, convenience and the type of handling to which the shipment will be subjected.

How can any of these factors be considered labor's responsibility? First, as to cost, obviously, no railroad can long survive if it sells its service at a price below the cost of providing that service. In order to be in a position to reduce rates, a railroad must be able to reduce its costs, increase its volume, or both. Wages, as we have indicated before, constitute the largest single item which makes up railroad costs. Labor has a tendency to demand rules which increase the cost of doing business to the point where the railroad must put such a high price on its service that its business will be attracted to its competitors.

Second, as to comfort. A wholehearted campaign on the part of railroad employees of providing passengers prompt, courteous, efficient service will mean that more people will choose the railroads as their method of travel.

The more efficiently rail freight is handled, the more business we should get. Therefore, it is to labor's advantage to cooperate with the management in the institution of more up-to-date methods. But labor may say: "This cooperation you ask may mean the adoption of some type of equipment or automatic conveyor, for example, which will cost the jobs of some employees." The answer is that if the change is not made there may be no jobs at all, and if the more efficient method is adopted the volume of traffic may increase so that additional employees will be needed.

The fourth point—speed or frequency of service—stems from the other three. If, through excessive labor costs and labor's reluctance to cooperate with efficient methods, traffic volume decreases to the point where the railroad is forced to curtail service, that is to reduce the frequency of runs from, say, one a day to three a week, there is no benefit to labor. Labor's strength lies in a strong industry which is enabled to give, fast, frequent, efficient service.

The type of responsibility needed here calls for real statesmanship on the part of both management and labor. The cooperation should be pointed in the direction which will in the long run result in the greatest good to the industry. Labor must be prepared to indicate

receptiveness to proposals to decrease operating costs to meet competition on a more favorable basis. This means a willingness on the part of labor to forego make-work policies and to cooperate with management in seeking efficiency. It means a willingness to abandon the "full-crew" theory in specific situations where such restrictive legislation means the difference between success and failure. (As an illustration of such an abuse Mr. Horning cited Commissioner Eastman's statement about the application of Wisconsin's full-crew law to the Milwaukee's Kickapo Valley Line in the abandonment proceedings.)

One activity which evidences labor's good faith in the field of competition and its appreciation of the need for traffic in its own and the industry's interest is the establishment of booster clubs to get more business. Under such a club, every employe-member becomes a solicitor and a representative of the company. Management should cooperate to the fullest in any such program.

Now about equality of regulation, tax-

ation, and subsidy in the transportation field. The railroads must continually press for equality. In this task they should be joined wholeheartedly by the ranks of railroad labor.

Power and Responsibility

One of the best articles on the subject of management and labor responsibilities that it has ever been my privilege to read was a recent report of a committee representing the International Brotherhood of Paper Makers, entitled "Labor Unrest and Dissatisfaction" from which I quote:

"Labor now enjoys the power it has sought for many years. Through its organizations this power is applied. Unless labor graciously assumes the full burden of the responsibility that accompanies power, society may decide there is no place in its makeup for labor organizations. Ours and other unions may be superseded by administrative agencies of government."

The maintenance of good public rela-

tions on any railroad cannot be delegated to any one "Director of Public Relations," or to his immediate staff. He can be useful in setting the long range sights on a program, but he cannot himself have much effect on public opinion, because he cannot personally reach enough of the public. Rather, good public relations are the responsibility of every railroad employee who comes in contact with any non-employee on or off the job. To please the railroad's patrons and the general public in every way is not only the duty of every employee, but is the best possible guaranty against unemployment among railroad workers. It's useless to tell an employee to be courteous without practicing courtesy yourself. Management can influence a man's disposition and should strive to set a high example.

During the war period, employees' suggestions have materially speeded up essential production in many fields and saved millions of dollars in costs. This same willing cooperation must be carried over into the peace period.

Purchasing Officer Assays Future

A concise review of railway achievement, lessons that have been learned, many problems now facing railways and suggestions to procurement officers

By A. C. Mann

*Vice-President, Purchases and Stores
Illinois Central System*

THE railroad industry is closing a year in which the greatest volume of freight and passenger traffic in its history will have been handled in a manner eminently satisfactory to all its customers—and particularly our main customer, the armed services. By comparison with performance in World War I, our industry is doing a far better job in this war despite the fact that we are handling a peak traffic load with much less plant and considerably fewer workers. We have been able to do this because of increased efficiency and improved teamwork. Our plant is smaller but it is better fitted to do the job at hand because we have invested billions of dollars in improving the property and equipment. In co-operation with our customers and the government, we have applied improved methods of operation, more efficient organization, more intensive and efficient use of our power and equipment.

The effect of railroad purchases upon the economic condition of our country is great. The railroads are one of the most important customers of the basic industries. In normal years railroads purchase 23 per cent of the national production of bituminous coal, 19 per cent of the fuel oil production, 16 to 20 per cent of all forest products, and 17 to 18 per cent of the iron and steel output.

This article is abstracted from an address presented before the New England Railroad Club, December 12, 1944.

From a low of \$445,000,000 in 1932, Class I railroad purchases of materials and supplies reached \$1,163,000,000 in 1941, \$1,260,000,000 in 1942, \$1,394,000,000 in 1943 and probably will reach a new high in 1944. These figures cover only direct purchases by Class I railroads and do not take into account purchases for railroad construction work by contractors or those who build equipment. The economic condition of our country also has been benefited by the splendid record of the railroad industry in the matter of debt reduction during the period of record traffic.

Where Are We as a Nation?

We find ourselves in a "status quo" so far as the government administration is concerned, and you'll remember the colored man's definition of "status quo" as "the mess we're in." We must assume that—at least until the war's end—there will be no radical change in either direction by the present administration in Washington.

The spirit of free enterprise—which is the foundation of democracy—demands progress. A nation or an industry cannot stand still. Individually as citizens and collectively as members of an industry we have obligations to meet. For the armed services we must produce and deliver the tools and supplies needed to bring early victory. After victory we have an obligation to see that the

same people are returned to civilian life on a proper basis of employment and a proper standard of living.

The railroads have an obligation to continue, without any let-down, their standard quantity and quality of service to the armed services and to the public. To that end we are urged to keep our motive power and rolling stock in full operating condition and to replace worn-out with new. Employer-employee relationships must be of the highest co-operative order to insure against breakdown in service.

We are now going through a testing time, in which our right to survive as a democracy is being challenged. Faith in diplomatic processes which in the past have brought some measure of international security and confidence has been shattered. The forces of democracy can achieve victory in this struggle only as they are able to overcome the forces of evil with an equal or greater power generated by love of freedom and inspired by complete selflessness.

Having achieved victory, the sincerity of our desire to maintain a democracy will be on trial. Our first consideration must be proper provision for the welfare of our returning service men and women. The bogey of unemployment must not be allowed to become so real in the confusion of the necessary turnover that we will overlook our obligations. Our first duty is to prevent human suffering. Haven't we the right to expect that the same energy which built up our war production will be applied to and will successfully bring into being the reconversion we hear so much about? There can be no victory in this war if, when it is over, we have widespread unemployment in the United States. In industry there must be the same unity of purpose in the objectives of our postwar effort as there has been in our determination to defeat the enemy. There can be no "high level" of productive employment—without a high level of thinking on our part. We must adjust our thinking to high levels.

The railroad industry already has taken back into its service hundreds of men discharged from our armed forces, and we are making definite plans to see that justice and fair play are given the thousands who have risked their all to serve our country. Barring possible conflict with labor contract interpretations, preference in employment within the spirit and intent of the G. I. Bill of Rights will be given returning service men by our patriotic and forward-looking American railroads.

Plans are being published by labor organizations and others to prove how necessary it is going to be to change our ideas as to wage rates, hours of service and the like. We know some changes will be required to offset the loss of high daily earnings in war industries. It is important that we keep an open mind for all proposals, with confidence that a plan equitable to both employer and employee, as well as to consumer, will be worked out.

Get Set for Competition

It is certain that the railroads will face keener competition than ever when peace comes, not only from the highways and waterways but also from the airways that will make a strong bid for a larger share of both passenger and merchandise traffic. We must accept this as a certain development and prepare to meet it fairly and squarely. We must not anticipate any revolution in railroading, but we should recognize that war has imposed a temporary stop to a continuous evolution in railroad progress.

Techniques which have been worked out for the economical and speedy handling of peak war-time traffic will be further explored and developed; we must study the

application to railroad operation of advances made in the electrical and radio field. We will put to practical use in railroad track and equipment what has been developed in the way of lighter and stronger metals, alloys and plastics. We will find new ways to protect properly box car lading—particularly mixed carloads of merchandise. Motive power will be improved. We may expect extensive development in this direction as is evidenced by the large steam turbine locomotive recently put into operation and the improved Diesel-electric 5,400 hp. freight locomotives being installed. I can see great advances in passenger car equipment designed for speed and comfort, and with eye-appeal.

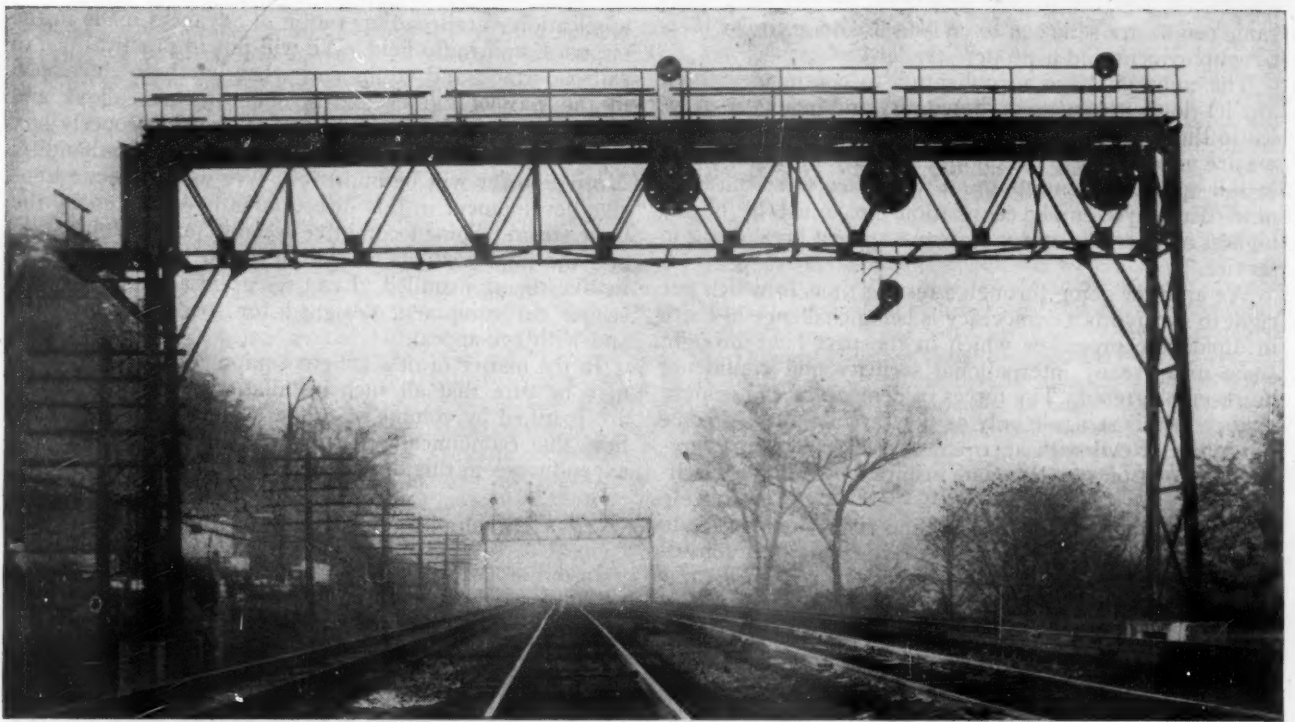
In the matter of new freight equipment and power, we may be sure that all such installations will be made as are justified by volume of traffic. There is reason to believe that economically the country will benefit by heavy expenditures in this direction.

Purchasing and Stores Requisites

In our stores work we must give more and more study to the use of material handling equipment and take advantage of the new developments. We must continue reclamation and other practices which have been adopted as emergency measures—many of which have proved efficient and economical. During the various salvage campaigns we have uncovered many wasteful practices. We must profit by these and continue to comb our scrap piles for items which can be reclaimed or repaired.

The activities of purchasing agents have been so restricted that former standard practices and methods have been of little use. Here again we must profit by experience. Sources of supply for many items are changing; operators of strictly war plants are talking of entering the railroad supply field; new products and devices are being developed for railroad use. The alert railroad purchasing agent must be ready to meet the new conditions and become familiar with the new sources of supply. Unfortunately the strain and stress of war conditions have developed in some railroad supply representatives a spirit of indifference to railroad needs—and possibly some railroad purchasing representatives have become unreasonable in their demands. Both of these must be corrected. We must enter the post-war period with a determination to keep open a clear channel for the movement of supplies from the producers to the users. I have every confidence that the railroad industry will meet courageously and effectively the challenge which post-war conditions will present. I feel sure also that we will justify fully the continued good will and co-operation of the public.

It is high time that those of us who believe in maintaining the integrity of the railroad industry should actively participate in opposing legislation having for its object the unfair or excessive subsidizing of other transportation groups to the detriment of the railroad industry. Maybe we should have a "railroad pressure group." There are certainly enough people directly and indirectly dependent upon a prosperous railroad industry to interest vast sectors of the nation in railway success in the post-war period. The railroad industry is a regulated industry—our income and out-go are almost completely controlled. Our post-war expenditures for new equipment—for both rolling stock and track maintenance—along with what we can and will do for unemployment—these things all are of vital interest to the public, including the politicians. I have faith that we as a railroad group have a righteous cause to place before the public and confidently believe we can accomplish much in our fight for fair and just treatment by the various governmental agencies.



Westward Home Signal Bridge at Sir Johns Run

Remote Control Saves Train Time

BETWEEN Sir Johns Run, W. Va., and Orleans Road, the Baltimore & Ohio has a 10-mile section of three-track main line, whereas four main tracks are available east of Sir Johns Run, as well as west of Orleans Road. An electro-mechanical interlocking at Orleans Road includes the switches and signals in the junction between the three tracks to the east and the four tracks to the west. There was an electro-mechanical interlocking at the three-track four-track junction layout at Sir Johns Run until the tower was washed away and interlocking destroyed in the Potomac River flood in 1936. From the time of the flood until the new remotely controlled interlocking was placed in service, the switches

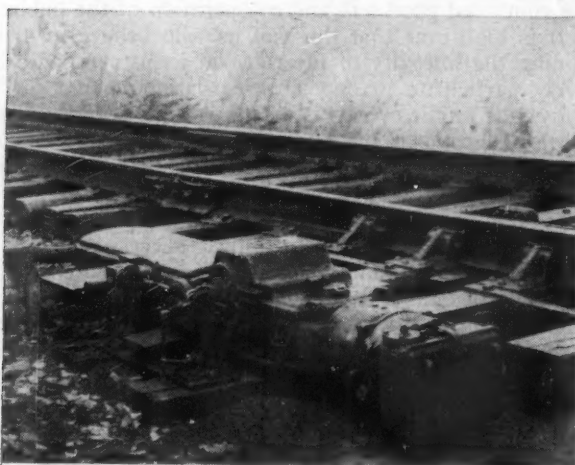
Baltimore & Ohio installs interlocking and either-direction signaling on 10 miles of third track which saves 30 minutes for each westbound freight train

at Sir Johns Run were equipped with hand-throw stands operated by train crews.

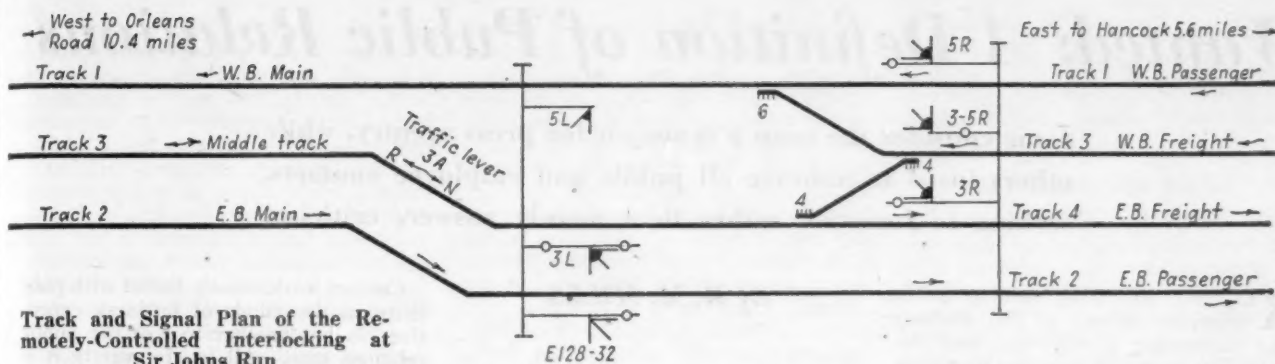
Also during those years the middle track between Orleans Road and Sir Johns Run was designated as the eastward freight track, with the crossover at Sir Johns Run normally positioned for an eastbound freight to be routed from the middle track to track No. 4 east of Sir Johns Run. Switch 6 was normally positioned for through moves on the westward passenger track No. 1. Westbound freight trains on track No. 3 had to stop at Sir Johns Run to permit the head brakeman to throw switch No. 6 for the train to head out on westward track No. 1. After the rear of the train passed, the switch was placed normal by the rear brakeman.

If a westbound train used the middle track from Sir Johns Run to Orleans Road, then crossover No. 4 between track No. 3 and the middle track had to be operated by hand. Such a westward move on the middle track was made only on train order. The result was that westbound freight trains lost time when waiting for No. 1 track to be clear of trains, and then lost more time in handling the switches, as well as getting underway from a second stop.

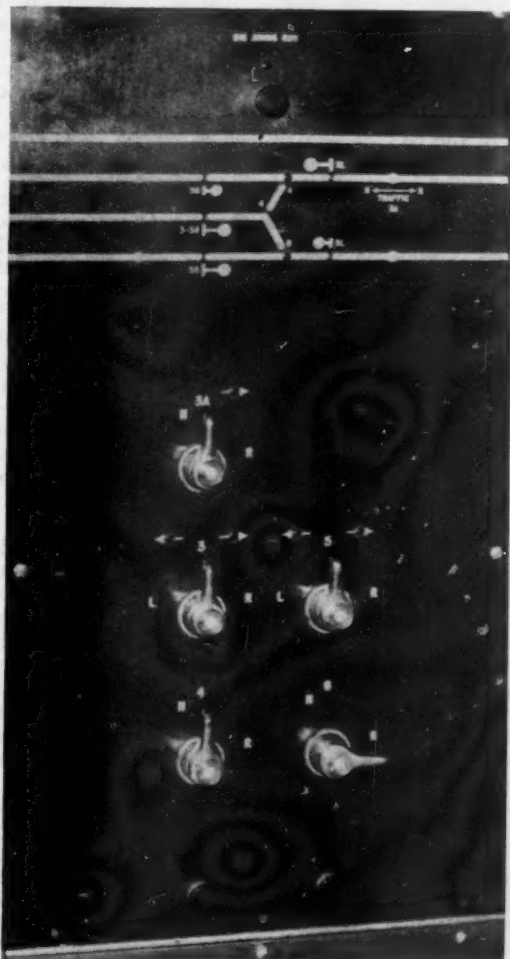
To improve these conditions, it was decided to interlock Sir Johns Run and signal the middle track to Orleans Road for movements in either direction. Three



The Power Switch Machines Are Dual-Control Type



switches and five color-position-light signals at Sir Johns Run are controlled remotely from a C. T. C. panel-type machine located in the tower of a previously-existing electro-mechanical interlocking at Hancock, W. Va., 5.6 miles east of Sir Johns Run. Referring to the track and signal plan, it will be noted that the eastward passenger track, track No. 2, extends through Sir Johns Run with no switches, and, therefore, this track is not involved, the eastward signal E128-32 being an ordinary automatic block signal. Between the control machine at Hancock and the interlocking layout at Sir Johns Run, the controls and indications are transmitted by the General Railway Signal Company Type-K, Class-M, 10-step time code, using two No. 14 wires in a previously existing aerial cable for the line circuit.



The Interlocking Control Panel is at Hancock, 5.6 Miles East of Sir Johns Run

The C. T. C. machine at Hancock, which controls Sir Johns Run, has five levers. One switch lever controls the single switch No. 6, and one switch lever controls the No. 4 crossover. The two signal levers No. 3 and 5 normally stand on center, being thrown to the left to clear eastward signals, or to the right to clear corresponding westward signals. Selections are established by the position of switches. Traffic lever No. 3A is for the middle track and is positioned normal or reversed for eastward or westward traffic respectively.

The illuminated track and signal diagram has lamps which are lighted to indicate the occupancy of each of the track sections within the home signal limits, and each of the five approach sections. Signal-clear indications are displayed by one or the other of two green lights, located above and on either side of the signal lever, the light being illuminated corresponding to the position of the lever and the respecting signal, L or R as the case may be, that is clear in the field. Lamps on the traffic lever indicate traffic reversed on the middle track between Sir Johns Run and Orleans Road.

Switch indication is provided by an out-of-correspondence light located in the barrel of the switch lever. This light is illuminated when the position of the switch in the field is out of correspondence with the position of the switch lever.

Train movements by signal indication in both directions on the middle track between Sir Johns Run and Orleans Road are accomplished by automatic signals and traffic locking. To clear an eastward signal at Orleans Road, the towerman at that location must have traffic lever No. 5 reversed. In order to release No. 5 normal lever lock, the traffic line circuit must receive battery from the Sir Johns Run end. This is done by the operator at Hancock placing traffic lever 3A in the normal position and then transmitting a line code to Sir Johns Run to energize a relay which feeds battery west on the traffic line circuit. This circuit breaks through front contacts of all the track relays between Sir Johns Run and Orleans Road, so that the station-to-station block must be unoccupied in order to change the direction of traffic. To establish direction of traffic from east to west, Hancock codes lever 3A reversed; Orleans Road places lever 5 normal and operates a push button.

Approximately 100 trains move through Sir Johns Run each day. During the month before the remote control interlocking and signaling on the middle track were placed in service, westbound freight trains took an average of 1 hr. 42 min. between Hancock and Orleans Road. After the new interlocking and signaling were placed in service, the average time was reduced to 1 hr. 12 min., a saving of 30 min. per train.

These facilities were planned and installed by signal forces of the Baltimore & Ohio, the major items of equipment being furnished by General Railway Signal Co.

Wanted: A Definition of Public Relations

Some consider the term a synonym for press agency, while others insist it embrace all public and employee contacts, seeking to forestall, rather than merely answer, criticism

RECENT letters by railway public relations officers in the *Railway Age* (December 2, page 852, and December 16, page 929) indicate that these officers themselves do not wholly agree on the nature of their duties. In 35 years of almost unbroken public relations work I have yet to hear an adequate definition of the craft. Someone has called public relations "a fluoroscope through which the good will and aspirations of organizations and individuals may be revealed to the public." According to one practitioner even the Greeks had a word for it—"managerial therapy."

These attempts at definition stress the difficulty of devising an all-comprehensive definition. The reason for this difficulty is not hard to find: public relations is an intangible.

"Narrow Construction"

Hearing that Louis Lundborg, manager of the San Francisco Chamber of Commerce, was about to conduct a business men's public relations forum at the University of Oregon, I suggested that he ask each of those in attendance to write a 25-word definition of public relations. The results, Mr. Lundborg reports, were with but one or two exceptions limited to definitions of publicity or public contact work. These two functions apparently were accepted by the executives in attendance as the sum total of the public relations craft. None took into consideration that more essential function of conforming company or institutional policy to the public interest. Overlooking entirely was that part of the task which has to do with the deserving, earning and obtaining of public favor. These experienced business men, who were interested enough to attend a several-day course in public re-

lations, had yet to understand the inherent characteristics of an activity each was striving to employ in his own undertaking.

There is, fortunately, a method by which we may obtain a clearer understanding of public relations and that is through examination of the tools with which a public relations man works. These tools are many. They vary, both in character and in application. Just as a skilled carpenter uses an array of saws, planes, chisels, hammers and other tools—each for a specific purpose—so the public relations expert has at his disposal and must be able to employ with skill and judgment many tools and devices. Some of the more important of these tools are: Publicity, personal contacts with individuals and with organizations, employee relations, established programs with defined objectives, policy advertising, public relations advertising and radio programs.

Public relations, as we know the profession today, developed out of the experience and imagination of a small group of skilled newspaper men who, during the early days of the century, had become publicity men for major American business enterprises. This, in part at least, may explain the undue emphasis placed upon publicity as a substitute for public relations. It has become customary for every publicity man to call himself a public relations counsellor, and in this there is much reason for criticism. If, without preparatory study, every practical electrician were to designate himself an electrical engineer the results would be somewhat similar.

Publicity Only a Part of Job

If publicity, when used by the public relations man, is but a tool, it does not follow that every publicity man is a qualified public relations counselor. In too many instances the would-be practitioner has mastered but this single tool out of a well-stocked tool box. He seldom is qualified to wield devices such as the employee relations program or the contact work so essential to success of any established public relations policy.

Publicity, moving through numerous channels, but principally through the press, strives to bring the favorable aspects of a company, institution or individual directly before the public eye. It might be termed the hammer of the public relations man.

By H. M. MILES

Contact work, closely linked with publicity in the minds of business executives, is but another tool of the public relations man. All too frequently it is employed as though one were to use but the eraser end of a pencil rather than the writing point of that implement. Altogether too much use is made of the contact man for purposes of mending fences or, to mix metaphors still further, striving to put Humpty Dumpty back together again. Actually, the more important function of the contact man is in keeping the employer and the public so well informed that disastrous Humpty Dumpty crashes will be of rare occurrence.

In his contact work, the smart public relations man looks ahead, forming new contacts in quarters where far-sighted analysis of business and political trends indicate a coming fusion or collision of interests. Contact work is indeed important. It is not, however, the whole substance of public relations. Let's call it the public relations spoke-shave with which we skillfully shave off the rough spots which complicate the relations of man and organizations.

Friendly Employee Relations

Employee relations is an extremely controversial subject—yet no corporate public relations program that fails to take employee relations into account can reasonably hope for complete success. Relations of management with labor usually fall into two general classifications. On the one hand lies the field of contractual agreement in which employee and employer alike must hue to the line, each striving to maintain his own reasonable interpretations of terms and conditions of the agreements they have made. On the other hand lies the broader field of mutual help and cooperation. It is in this field that the public relations counselor reaps rewards for his client.

Here much has been achieved while much more remains to be accomplished. Industrial hospital and insurance plans have functioned for so long that they are now taken for granted. An example of recent management contributions to employee welfare is the small loan plan adopted by some of the utilities.

The employer, acting through a bureau chief or department head, offers small loans without interest to cover the sudden cash demands of maternity, death, and other domestic emergencies.

From the public relations officer's point of view the good will and loyalty of the employee is all-important. Each employee is a point of contact between

The Author

Mr. Miles is a special representative of the law department of the Southern Pacific. He began his railroad career as a copy-writer in the S. P.'s advertising department. With some newspaper experience, he was national publicity director for the Salvation Army during World War I. Thereafter, he did publicity work for the Red Cross and other organizations, conducting a publicity and public relations enterprise of his own 1920-25. In 1926 he returned to the S. P. as editor of its news bureau. His present duties, in the railroad's law department, largely comprise public contacts for that organization.

the company and the public. The aggregate effect upon the public mind of these innumerable employee contacts is something to consider. It can be constructive or destructive; but it cannot safely be disregarded by management. Therefore employee relations has become a tool in the public relations man's kit. Let's call it the mitre-box in which are cut to true angle and proportion many of the closely joined parts of the public relations program.

Perils and pitfalls, plentiful in the field of employee relations, may be charted in a public relations program and their removal attempted through educational effort. For the employee to benefit, business must itself make a profit. Industry never can be the Santa Claus with the bottomless sack which some workers apparently imagine it to be.

Public relations advertising, "selling" copy plus something added, is another effective tool. The difference between sales advertising and public relations advertising becomes clearer when we consider the sad case of a certain nationally known razor blade manufacturer. This company, rapidly losing business because its blade had declined in merit, decided to re-tool its plant and improve the quality of the blade.

Sales production for the new product reached the point of discussion with the firm's advertising agency. You have a lot to overcome, agency men insisted. In place of singing praises of the new blade, why not come out frankly with the truth? The present blade is inferior; you apologize for letting it become so; you have reformed; you want the public to give you another chance. To the client such radical treatment appeared dangerous if not absurd.

Telling the Unpleasant Truth

Then, pleaded the agency men, let's make a test of it. Let's pick two medium-sized and otherwise comparable communities. In the first our advertising will concentrate entirely upon the merits of the new blade. But in the second community we will boldly admit past failures, pleading with the reader to compare our new and superior blade with the wretched product formerly sold by us.

Here, in a nutshell, you have the difference between straight sales advertising and advertising based upon a public relations policy. When put to the test, straight sales advertising failed while under identical conditions the experimental public relations advertisements increased sales immediately and manyfold.

Many devices lend themselves to the skilled hand of the public relations executive. Used with judgment and moderation, public speaking is a necessary and worthy tool. With outstanding success the late Charles H. Markham, when president of the Illinois Central, employed newspaper policy advertising to improve the public relations of his railroad. Henry Ford, with his

Sunday Evening Hour, and the Pacific Gas and Electric Company, with a 5-year nightly broadcast of recorded music, have used radio as an effective public relations medium. These broadcasts were different in character from broadcasts limited to sales promotion. All were devised and did successfully operate as factors in the winning of public goodwill. A good slogan has worked wonders. In 1918, Bruce Barton of New York, widely known as author, advertising man and legislator, gave to the Salvation Army a slogan which was a public relations campaign in itself. No doubt you remember it: "A man may be down but he's never out."

Business, in its fight to retain free enterprise, has yet to match in effectiveness the diamond-brilliant train of political slogans. Throughout American history able word-smiths have helped shape destiny with such well-remembered slogans as: Give Me Liberty or Give Me Death—Remember the Maine—The Cross of Gold—The Full Dinner Pail—Back to Normalcy—The More Abundant Life—The New Deal—The Forgotten Man—to mention but a few.

A Plan Is Necessary

Above all in importance to corporate public relations work is a plan—a policy. Like the ship that sets out to sea without chart or port of destination, so is the public relations organization which works without well-defined objectives, established authority, and an adequate annual budget. The tools must be used selectively and adapted to the plan. The plan that works beautifully for one company might well be a detriment to another. The new enterprise, with little or no historical liability, has different problems from those confronting a corporation with a background of fifty years of public misunderstanding. With a clean slate the first may build for the immediate future, while the latter must add to the immediate task the even greater job of wiping from the public mind those historical prejudices which, feeding upon themselves, multiply from year to year. Public relations programs do not come ready made. Only after proper research and analysis can they be fitted to the shape of things to come.

It is the very spread and variety of public relations media that makes this profession so difficult to define. That it has been a profitable adjunct to business and government is beyond question. Its future is conditioned only by the haziness of business executives as to the proper scope and functions of a public relations policy. Too many companies have instituted public relations programs with the same lack of faith in which our forebears once administered the old-fashioned spring tonic—sulphur and molasses—it might help; it couldn't hurt.

A backward glance should reveal the fallacy of this attitude. Modern public relations came into being in the early 1900's. It had one purpose and one purpose only. That purpose was to clear away the tremendous accumulation

of public hatred, distrust and misunderstanding cast upon the heads of early captains of industry when yellow journalism first flared, and after the first Roosevelt had launched his historic trust-busting campaign.

Letting in the Light

In New York a well-known newspaperman, the late Ivy Lee, learned that J. D. Rockefeller, Sr., was becoming increasingly unhappy over the abuse heaped upon him in cartoons, editorials, muck-raking magazine articles and political orations. Rockefeller wanted to do something about it. He was fumbling for a solution. Public disapproval, rapidly crystalizing into the form of obstructive legislation, threatened to pull down the carefully reared corporate structures of the Rockefellers, Carnegies, Goulds and of the lesser stars of big business.

Lee thought he had found a solution. Through influential friends he made an appointment with the oil magnate. With shades drawn against the late afternoon sun, Rockefeller sat in his dim office, listening impassively as the newspaper man told his story. When Lee had finished, Rockefeller sat in silence for long moments, then said: "And exactly what could you do for the Standard Oil Company, young man?"

With a sense of failure Lee strode to the window, abruptly thrusting aside the heavy velvet curtains so that sunlight poured into the dark office. "I could let in light upon the Standard Oil Company so that the people might see and know the facts."

The great, formless, unorganized, uninformed middle class, I submit, is not only the principal customer of business, agriculture, and transportation—it is presently the uncontrolled power which either will save big business or for all time enslave it in chains of so-called regulatory and labor legislation. It is upon this group that postwar public relations activities must be focused if big business is to survive.

Contrary to ingrained ideas, public relations is not a lock to be put on the door after the horse has been stolen. It is, rather, a protective function designed to prevent the horse from being stolen, aimed at so conditioning the public mind that few will want the horse to be stolen. Business generally, and the public utilities in particular, increasingly will be circumscribed by political pressures and enactments. In resisting these ill-considered pressures, business has but one effective resource and that the carefully designed, ably administered long-time public relations program.

R. R. Picture Needs Hypo

Railroads today are at a peak of public approval. Actually, however, they are somewhat in the condition of the photographer's plate just emerged from the dark-room developing solution—the image is as clear as ever it will be but, if it be not promptly fixed in the hypo solution, the image will fade, the picture be lost.

Freight Brakes

(Continued from page 987)

The weight of a typical locomotive suitable for the type of service under consideration is in the neighborhood of 780,000 lb.; the weight is about equally divided between the engine and the tender. The weight of the engine portion of the locomotive is substantially constant and, therefore, a given brake-cylinder pressure will develop the same retarding force at all times. It follows that under the extreme conditions represented by a long empty train in one case and a long loaded train in another case, there is a great variation in the effect of the locomotive's rate of retardation on train slack. If, therefore, the brake-cylinder pressures are varied in accordance with the change in weight of each train, the retarding forces on the locomotive would then correspond more nearly to the average of the train.

The change in braking ratio on the locomotive is very readily accomplished by a manual adjustment of the pneumatic devices involved. It can be in the form of an exceedingly simple manually set pneumatic relay. This relay is of the well-known differential type in which air pressure on the primary side of the relay causes the development of one of a choice of several pressures on the secondary side, depending upon the manual setting. With this arrangement the locomotive engineman, on learning the average weight per car of his train and knowing that it is a high speed manifest train or a lower speed heavy commodity train, will make the manual adjustment of the differential relay for the purpose of regulating the braking forces correctly for the particular run.

Communication . . .

The Railroads in Transition

SANTA MONICA, CALIF.

TO THE EDITOR:

For 25 years I have studied with the interest of boyish enthusiasm the operation of our American railroads. I have traveled the length and breadth of our land many times, with side trips and short line excursions by the score, and have watched the gradual change from the Pintsch burner palace cars to the fluorescent lighted streamliners. I have talked to passengers by the thousands, bombarded train crews with questions until they were weary, frequented stations, shops, round-houses, yards, etc., too numerous to count. I mention these facts because they represent the background in railroading of many thousands of rabid railroad fans or "boosters" who may be found in any city, town, or village in our 48 states.

Suggests Essay Competition

The railroads, like other carriers, are endeavoring to ascertain the likes and dislikes of the American public in order to better plan their future equipment purchases, and to determine what new types of cars or services should be added to their post-war consists. Instead of presenting a small questionnaire to a few passengers as some of our railroads have done, why not increase the scope of the survey and through national magazine and newspaper advertisements, under the auspices of the Association of American Railroads arrange an essay competition on this subject with prizes large enough and numerous enough to interest countless thousands of our people. Needless to say, *do not* exclude the many thousands of railroad employees and their families who by the nature of their work or relationship have been exposed to the facts for years and should be counted upon for some mighty enlightening comments.

This is indeed an important period in the transition of American railroads, and an opportunity for revitalization of not only equipment but thinking as well. For example, not long ago it was my pleasure to spend several hours with the assistant to the vice-president of a western railroad. We discussed many phases of railroading with particular attention to pre-war passenger equipment and post-war plans. Although we saw eye to eye on many questions and problems, one point was brought out by this official which clearly indicates the lack of understanding and good will toward the public which, in the past, has been conspicuous by its absence on some of our railroads. It was this. When I asked why a certain main line train was made up of the oldest and dirtiest cars on the system and carried only one diner and only a half lounge car with no observation car when one formerly had been included in the consist, his answer was this—why should we operate a first-class train when we have no direct competition? An amazing statement for an executive whose job it is to "sell" his railroad to the traveling public. This is not my idea of a sensible approach to the problem of creating good will, and it most certainly is not for the best interests of the traveling public or the railroad itself. This instance of disregard for the comfort and convenience of passengers is fortunately not the attitude of the majority of our railroad executives, who realize that advertising pays, and a clean, modern-appearing, and well equipped train will invite travelers—not repel them.

The Value of Color

All railroaders will recall with delight their first glimpse of a modern streamliner—its curved roof line, lower skirt, folding steps, streamlined observation car end, and its beautiful appealing colors. It was the culmination of years of dreaming and wondering why this had not come to pass sooner. Why must the traveler wait years for improvements which he wants to enjoy *now*? For example, every 18 to 24 months, on the average, Pullman cars are shopped. They are completely overhauled and repainted. Yet even now these cars are being painted the same dismal dirty green they were 25 years ago. Why not paint them in the new lightweight Pullman colors inside and out, and when fabrics and carpets need replacing use the newer style materials? By this process even the non-streamliners would become inviting to the traveler and would increase in eye appeal and advertising value. The railroads need only paint their chair cars, diners, club cars, and lounge cars, and the Pullman Company could furnish its equipment to match. Talks I have had with Pullman executives indicated their willingness to take this step if the railroads are interested.

It would be wishful thinking to suppose that the railroads could afford to place whole fleets of shiny new streamliners on their rails immediately after cessation of hostilities. Even if they have the money, which most of them have not, it will take months and even years before any great numbers of new cars can be produced. In the meantime, why not paint up the old ones during the course of their general periodic overhaul?

As soon as sufficient cars have become available, would it not be smart advertising and good business for the railroads to assemble sufficient cars for a complete consist and announce to the public through the newspapers that train No. 207, for example, was to be discontinued and in its place their road was inaugurating the modern and beautifully equipped "Rocky Gorge Limited." The cost of such a modernization would be small, but it can be likened to a man wearing a new suit of clothes—he feels better, presents a better appearance, and his pride is bolstered. How about the train crews who operate old and dirty equipment? They can't help being less interested in their work than the crews of modern, clean, and beautiful trains. And after all, in the last analysis, it is the train crew that "sells" the passenger on a future trip over his line. A porter assigned to an old style Pullman painted the conventional and uninteresting dark green can hardly be expected to display the same enthusiasm for his work and interest in his surroundings as a porter whose pleasure it is to be the "George" of a modern or refurbished Pullman. Likewise throughout the train from one end to the other, old 207 would become a personality. The entire crew would feel this change and reflect it in their actions and speech.

Railroad presidents don't minister to the needs of train passengers during a journey. They seldom hear the avalanche of

complaints directed to their operating personnel daily by irate passengers who don't understand (and who does) why a car can't be air conditioned without forcing everyone to dress as they would for an arctic exploration, or why in normal times a car with a flat wheel is allowed to be attached to a train when even a person without the faculty of hearing could tell you what the trouble was. Certainly the trains crews report such mechanical troubles long before they are attended to. Is it possible that the railroads don't realize this sort of thing doesn't add to their patronage? I traveled from Chicago to the west coast several years ago in just such a car, and needless to say, I not only didn't sleep during the entire trip, I was physically and mentally upset for several days after reaching my destination, and I acquired a sincere dislike for the type of management that would allow a car to be operated in that condition. It showed an utter disregard for the passengers who, after all, are bound by no contract to travel on a certain railroad, and who will, if a competitive system is operated, avail themselves of that other means.

Streamliners Pay

For as long as I can remember the question of why the railroads were unwilling to operate cleaner and more inviting trains has been answered with the statement that passenger trains, almost without exception, lost money, and to improve this service would require dipping into the earnings of the freight service. The fallacy of this belief may be substantiated in a perusal of the earning statements on any one of many of our present de-luxe streamliners. Even before the war they were booked weeks in advance. Why? The reason is obvious. People wanted that type of service, and it didn't in most cases cost any more, so they waited for the streamliners while the older style trains carried fewer passengers.

One point that should receive very careful consideration in the post-war period is this: On overnight or long distance trains where more than one schedule is operated, the consist of each train should be limited to one class of ticket. For example: On a transcontinental run, let us assume there are four trains per day. Train No. 1 would be a de luxe all-Pullman streamliner, if possible. Train No. 2 would be a first-class modernized standard Pullman train. Train No. 3 would be made up of the present tourist Pullmans not suitable for the more extensive modernization required to place them in the same class as train No. 2 Pullmans. However, this train, likewise, would be painted in a similar manner as Train No. 2 with the exception that the words Tourist Car or Economy Car would be placed in the present location at the center of the car side below the window belt line. Train No. 4 would be an all-coach train.

My observation is this: Americans do not like to be placed in a "class" or feel class distinction. When a first-class train carries a diner, lounge car, and an observation car, and also carries chair cars (not parlor cars), the chair car passengers are usually not permitted back in these de-luxe cars. This is as it should be for they are paying a lesser fare and are not rightfully entitled to the same luxury. However, they could be spared this sense of distinction by the removal of chair cars from first-class trains, and the establishment of a solid chair car or coach train with a lunch counter-type diner. This system has been employed by several railroads with tremendous success. Why not make it a general policy among all roads?

Observation Car

Another important consideration, and one which is all too often overlooked by our railroads, is the observation or tail end car. In the eyes of a great majority of our travelers a train without an observation car is like a freight train without a caboose, or a boat with the stern cut off. Railroad men will invariably inform you that the lounge car belongs next to the diner so passengers can relax and enjoy a drink before meals. That's fine, but why not make it a half-lounge, half-Pullman room car and give the fellows a break who enjoy lounging in the rear end observation car where they can watch the panorama of changing landscape as it slips by, and from a vantage point impossible in the middle of the train. Then, too, there are many persons, like myself, who carry cameras for the express purpose of photographing everything of beauty along the way. The percentage of vacationers who employ this means of recording their trips will astound you, and their desire for this tail end

car, whether open platform, glassed-in solarium, or new style streamlined end car, is not to be lightly considered. While on the subject it should be remembered, also, that all persons who travel do not drink, and lounge cars in general reflect the barroom spirit of gayety. Those who do not care for this sort of thing have absolutely no place to relax outside of their own rooms or sections on trains not equipped with an observation car. Why not have a buffet section in the observation car and cater to these passengers, also?

E. F. HUNTER, JR.

New Books . . .

As Much as I Dare, by Burges Johnson, 346 pages, 8¾ in. by 5¾ in. Bound in cloth. Published by Ives Washburn, Inc., 29 West 57th Street, New York. Price \$3.50.

The author of this book is not a railroad man (he is a teacher and writer, and once was an editor). Nor is the book about railroads, except as a friendly customer's views are occasionally expressed. But it does possess real entertainment value for railroad men, as for any other readers who appreciate interesting reminiscences of a life full of worthwhile experiences, told in an easy, friendly, witty manner.

Railroad men have been called all sorts of things, but this author appears to have struck a new note when he calls them *djinns*! The appellation occurs in this typical passage:

"A railroad is a strange assortment of many parts, from office clerks to real estate, conductors to cabooses. Yet ever since the first track was laid, each railway system has acquired a personality of its own, not only in the minds of those who build and run it, but especially of those who travel over it regularly. It is a super-human creature, detached from the weak human personalities of those who pretend to direct its destiny. They are *djinns* who summon for me my magic carpet and then turn calmly away to attend to other mysterious and more tremendous business. But my feeling of awe does not prevent a growing intimacy. It is as though Aladdin came to regard his flying rug with a real affection, and eventually addressed the djinn who summoned it as George."

It may be news to some readers that Theodore Roosevelt was an honorary member of the firemen's brotherhood, and that Colonel Mann, whose "boudoir cars" were in competition with Pullman at one time, was the publisher of a pre-Walter Winchell gossip sheet in New York. Doctor Johnson really got around and picked up bits of knowledge of many kinds.

Civil Aviation and Peace, by J. Parker Van Zandt. 157 pages. 9¼ in. by 6 in. Bound in cloth. Published by the Brookings Institution, 722 Jackson Place, Washington 6, D. C. Price \$1.00.

Dealing almost entirely with questions of public policy with respect to international commercial air operations after the war, this book continues the examination of this country's opportunities and obligations under such circumstances which was begun in the same author's "The Geography of World Air Transport," reviewed in *Railway Age* of July 29, page 205. Both books, and a third to be published, belong in a series called "America Faces the Air Age."

A positive policy of co-operation among the nations (except those currently branded as aggressors) for the maximum development of international air transport, rather than any procedure designed to apply restrictive measures for the control of either civil or military aviation, is recommended in this study. The basis of this argument is that it would be futile to seek security and lasting peace through control of civil aviation because its application to international aviation would have to depend upon attaining control of the much more important domestic aviation, which would be "impracticable" because such operations would be beyond international regulation.

America would benefit from this proposed air policy, this study suggests, because it would promote foreign travel, and the resulting tourist expenditures would increase the availability of dollar exchange and so promote the sale of American goods abroad. That there is a large potential air travel market the author has no doubt, provided international airlines can operate on a self-supporting basis with a 3-cents-per-mile level of fares, which

he believes technological improvements and volume operations will make possible.

In this connection, a comparison is made of the "utilization" of airway and surface-operated conveyances, in which it is shown that the average mileage per unit per year was much larger for planes than for either railroad or highway equipment. In 1942, the planes of four principal United States airlines averaged 531,000 miles each; Greyhound buses averaged 80,300 miles; Class I inter-city trucks averaged 47,600 miles; Class I railroad freight cars averaged 17,600 miles; parlor and sleeping cars averaged 145,000 miles; and other passenger train cars averaged 70,800 miles. The size, speed and efficiency of the planes available after the war will probably be increased, the author believes. "The net result will be to keep aircraft in scheduled operations relatively limited in number. Thus it would take only 1,600 planes carrying on the average some 28 passengers per trip, flying about 10 hours per day at an average speed of 200 m.p.h., to produce 32 billion passenger-miles per year. This is roughly equivalent to the total inter-city common carrier passenger traffic by rail, bus and air in the United States in 1940."

Notwithstanding the possibilities which he sees in organized international air transportation after the war, the author suggests that domestic air travel will largely be in the non-scheduled, individually-owned and operated category, in this respect following the pattern of the development of automobile travel.

The Long Trains Roll, by Stephen W. Meader. 259 pages. 8¼ in. by 5½ in. Bound in cloth. Published by Harcourt, Brace & Co., New York. Price, \$2.00.

Without departing from a well established formula, for a typical adventure story for boys, this book manages to weave a lively tale of enemy spy activities against a realistic railroad background. Needless to say, the hero, with the assistance of the F. B. I. and his faithful red setter, Babe, succeeds in frustrating attempted sabotage and averting a catastrophe that threatened a major wartime transportation artery with disaster. But the reader will find the work of the railroader, particularly of the man on the lowest rung of the ladder, the section hand and hostler, the student fireman and brakeman, understandingly and entertainingly described, and he is likely to finish the book with a much keener appreciation of their importance in the scheme of things.

The scene of the story is an unnamed four-track railroad running between Harrisburg and Pittsburgh, and particularly its mountain crossing west of "Gaptown," where the road's principal shops are located. If this line seems to be particularly susceptible to rock slides, if its torpedoes seem to be easily affected by dampness, nevertheless its employees are alert and ready to meet emergency with resourcefulness and zeal. The importance of the railroads to the country, particularly in wartime, and the importance to the railroads of the integrated efforts of the men who work with their hands are clearly demonstrated through the author's descriptions of maintenance and yard and train service operations, in which basic safety principles and standard railway practices are explained and emphasized.

Cable Car Days in San Francisco, by Edgar M. Kahn. Revised edition. 134 pages. 10 in. by 7 in. Bound in cloth. Published by the Stanford University Press, Stanford University, Cal. Price, \$3.

This entertaining book tells the story of the cable car in San Francisco from its inception up to the present time. The history of the various cable car companies is outlined and particular attention is paid to the California Street Cable Railroad Company with which Leland Stanford was identified. Numerous human-interest anecdotes add to the interest of the book.

It is well-illustrated, and contains, in addition to the many photographs of cable cars, drawings in the style of the Nineties which head the chapters and line the covers. Several new illustrations have been added to this edition, the last chapter on the present status of the cable car has been entirely rewritten, and a more complete account of the Market Street Cable Railway Company and the Sutter Street Cable Railroad Company has been included. For the enthusiast for this method of transportation this book should prove both instructive and enjoyable.

Locomotive Cyclopedia—1944 Edition. Published by the Simmons-Boardman Publishing Corporation, 30 Church street, New York 7. 1,396 pages, 8¼ in. by 11½ in., illustrated. Bound in Fabrikoid. Price, \$5.

The 1944 Locomotive Cyclopedia is the twelfth edition of this reference book, the first of which was printed in 1906. In general, this new edition follows the form of the 1941 book and is divided into 20 sections, each of which covers a group of associated equipment and thus simplifies reference to any particular group. The use of the book is also made easy by the five tabulated indices. There are also several bibliographies covering articles in recent publications.

While the general make-up of previous editions has been retained, the subject matter has been thoroughly revised. A large amount of new material has been incorporated and only such old material retained as still represents regular current practices and which is needed to make the book complete. In the work of revision the editors have received valuable assistance from the Advisory Committee appointed by the Mechanical Division of the Association of American Railroads; the mechanical heads of practically all railroads; the locomotive builders; the manufacturers of locomotive equipment, and those supplying machine tools and shop equipment.

The book contains 1,396 pages, 84 more than the previous edition and the largest number in any edition yet published. In the sections devoted to steam-locomotive equipment there are elevation drawings of a number of steam locomotives of recent design; improved lubrication equipment; new types of locomotive tenders of large capacity, and new and improved brake equipment.

The section covering Diesel locomotives for railroad service has been greatly extended to cover current developments in this type of locomotive for switching, transfer and road service, both freight and passenger.

Information in regard to railroad electrifications has been fully revised and brought up to date. The section on export locomotives has been amplified to include locomotives of all types instead of only steam locomotives. New material has also been added for industrial locomotives. The section devoted to locomotive shops and engine terminals and their equipment has been thoroughly revised and expanded. Special attention is given to the repair and maintenance of Diesel locomotives. Descriptions of locomotive specialties and devices are much more complete than in any previous edition.

* * *

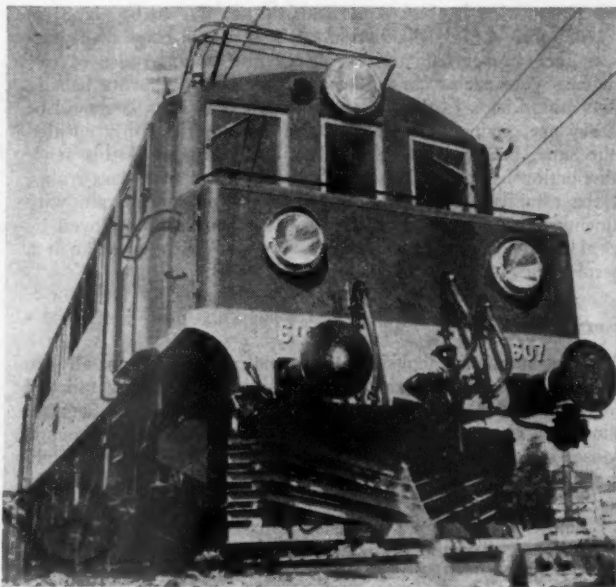


Photo from European Picture Service

This New 3600-Hp. Locomotive of the Swedish State Railways Has a Top Speed of 50 M.P.H. and Was Designed Especially for Use on Heavy Grade Lines in the Northern Part of the Country

Railroads-in-War News

All Railroad Records Smashed This Year

A.A.R. President J. J. Pelley
reviews performance in
year-end statement

Making his usual year-end statement on December 29, J. J. Pelley, president of the Association of American Railroads noted that "all previous transportation records were broken in 1944 by the railroads" when they handled, "without serious transportation difficulties," the "greatest volume of freight and passenger traffic in their history." Mr. Pelley's statement continued as follows:

"Freight traffic moved by the railroads in 1944 amounted to approximately 740 billion ton-miles. This was 1.8 per cent above that for 1943, the previous record, and two and one-fifth times the number of ton-miles moved in 1939.

"Railroads handled this enormous traffic load in the current year with virtually the same number of locomotives and with hardly more than a nominal increase in the number of freight cars compared with 1939. There also was only a slight increase in the number of passenger cars.

"Freight carloadings in 1944 totaled approximately 43,500,000 cars, or an increase of 2.5 per cent above the preceding year. The increase in the number of freight cars loaded and longer hauls per ton accounted for the increase in the ton-mile volume of freight.

"Passenger traffic in 1944, too, was by far the greatest for any year in railroad history. It amounted to 96 billion passenger-miles. This was an increase of 9.3 per cent above 1943, and four and one-fifth times what it was in 1939. This unprecedented movement of passengers in 1944 resulted in part from Army troop movements, more than 10,700,000 men having been moved in special trains and special cars alone. This number does not include the millions of soldiers, sailors, and marines on furlough who traveled during the year, nor does it include small groups of individuals moving on order, nor Navy and Marine Corps movements, nor prisoners of war.

"Outstanding operating records established by railroads in 1944 follow:

"1. Average load of freight per train was 1,144 tons, the highest on record. In 1943 it was 1,116 tons.

"2. Performance per train more than doubled in 20 years, gross ton-miles per freight train hour having increased from 18,257 in 1924 to 37,548 in 1944, while net ton-miles per freight train hour increased from 8,222 in 1924 to 17,745 in 1944.

"3. Average daily movement of active freight cars was 52.8 miles in 1944 compared with 52 miles in 1943.

"4. Average haul of freight was 478 miles in 1944, compared with 469 miles in 1943.

"5. The average number of passengers per car and per train was much greater than ever before.

"6. Average revenue for hauling a ton of freight one mile was 0.942 cents compared with 1.116 cents twenty years ago.

"7. Average capacity of freight cars was 50.9 tons at the end of 1944, the highest on record.

"8. Tractive power of steam locomotives averaged 53,000 pounds, the highest ever recorded and an increase of 33 per cent compared with twenty years ago.

"There was a noticeable leveling off in traffic in the latter months of 1944 and present indications are that the record high mark in the volume of both freight and passenger traffic has been reached.

"From a financial standpoint, the results in 1944 have not been as satisfactory as in previous years. While gross revenues have continued to follow the line of increasing traffic, the peak in net earnings was reached in 1942 and has been declining since then. Gross revenues in the current year were more than two billion dollars higher than in 1942 but net railway operating income was off \$340 million dollars. This has been due to higher wages and taxes and to increased cost of materials and supplies. Since the beginning of the present war, these costs, other than taxes, have increased by more than 25 per cent.

"Railroad taxes in 1944 were by far the highest on record, amounting to the unprecedented sum of \$1,900,000,000. In order to meet their taxes alone, railway revenues derived from 73 days of operation were required in 1944. Expenditures for fuel, supplies and materials used in current operation by the Class I railroads amounted to approximately \$1,600,000,000 in 1944 compared with \$1,394,281,000 in 1943. Capital expenditures in 1944 for equipment, roadway and structures and other improvements to property are estimated at \$550,000,000 compared with \$454,282,000 in the preceding year."

C. & E. I. Wins Victory Garden Award Second Time

For the second consecutive year, the highest award of the National Victory Garden Institute has been won by the Chicago & Eastern Illinois. The award was based on the railroad's achievement in encouraging the planting of victory gardens by its employees, taking into consideration the acreage under production and the amount of food produced. More than 2,000 acres of C. & E. I. property along the right-of-way were cultivated by employees and others who received permission from the railroad.

Fraser Back from the Western Front

With five other manufacturers
he learns first hand of the
Army's supply problems

"Army engineers and railroaders in France have done a magnificent job in restoring rail transport to the front," Duncan W. Fraser, president of the American Locomotive Company, said on his return to the United States following an inspection tour of military installations in continental Europe and England early in December.

"Hundreds of U. S.-built locomotives are now hauling thousands of tons of supplies daily from ports to supply areas, replacing the emergency Red Ball express truck highway. Some 45 per cent of the locomotives and 40 per cent of the cars in France had been destroyed by bombing," he said.

Mr. Fraser met and talked with Generals Eisenhower, Bradley, Patton and Hodges, who described their problems and needs frankly and in detail. On the basis of his talks and what he saw Mr. Fraser warned against over-optimism. "The war in Europe is not won. The need for munitions is urgent. It demands continued all-out effort on the part of all of us who have anything to do with war production."

Mr. Fraser was one of six American industrialists, representative of various phases of war production, who were invited by the War Department to view at first hand the use of American-made equipment in the fighting zones and to learn the needs of our armies in the field.

Mr. Fraser, the representative of the locomotive industry, had an opportunity to see and learn about the performance of Alco-built war locomotives, M-4, M-7, M-36 tanks and tank destroyers, 105-mm. howitzers and 155-mm. "Long Tom" rifles. At the front the party, accompanied by Brig. Gen. Albert J. Browning, assistant director of Materiel, War Department, saw some of the big guns fired. They were protected on this phase of their journey by two jeeps full of Rangers.

At one point they saw the German V-1's and V-2's in action, and at another they watched anti-aircraft guns fire at a German plane which had dropped a couple of bombs in their vicinity.

Following a brief stopover in Great Britain, they inspected Cherbourg and other ports where supplies first reach the continent, supply and salvage depots, railway repair shops, air fields where battle casualties are placed on planes bound for England, tire repair plants, and many other types of supply and service units in France,



U. S. Signal Corps

Gen. Dwight D. Eisenhower Poses with Industrialists on Tour of the Western Front

Left to Right: Brig. Gen. C. J. Browning; Stuart W. Cramer, President, Cramerton Mills, Inc.; Gen. Dwight D. Eisenhower; S. E. Skinner, Oldsmobile Division, General Motors; C. G. Stoll, President, Western Electric Company; Charles Kendrick, President, Schlage Lock Company; Duncan W. Fraser, President, American Locomotive Company, and Frederick G. Crawford, President, Thompson Products, Inc.

Belgium, Luxembourg, and Germany. The group spent some time in Aachen where they saw the destruction wrought by American artillery. It took 300,000 105 mm. shells to level and capture the city.

Referring to the meetings with the heads of the U. S. Armies in Europe, Mr. Fraser said, "All of us were greatly impressed by General Eisenhower, and Generals Patton, Bradley and Hodges. We left with full confidence that these men who are responsible for operation in the zones we visited are men of outstanding ability and judgment."

It was pointed out that the worst weather in forty years had greatly restricted bombing operations, calling instead for unprecedented use of artillery. The industrialists were unanimous, Mr. Fraser said, in emphasizing the critical need to speed up production, particularly of heavy artillery ammunition. Increased production of shells is essential to accelerate the advance of our armies.

Byrnes Stops Horse Racing

The director of war mobilization and reconversion, James F. Byrnes, announced December 23 that, "with the approval of the President," the managements of race tracks throughout the country had been "urged" to take immediate measures to bring race meetings to a close by January 3, 1945, and to refrain from resuming racing at all tracks until war conditions permit. It was reported that general compliance with this "suggestion" was in prospect. The announcement continued, "I have also asked the chairman of the War Production Board and the director of the Office of Defense Transportation to take such steps as fall within their power to prevent the use of critical materials, services and transportation in the operation of these tracks if such steps should prove necessary. However, I am confident that the managements of these tracks can be depended upon to take prompt action without the necessity of recourse to other measures."

This action was finally taken, it was indicated, because the War Manpower Commission had felt itself compelled by circumstances to authorize employment of manpower at a track in a critical labor area. However, Justice Byrnes pointed out that "the operation of race tracks not only requires the employment of manpower needed for essential operation, but also manpower, railroad transportation as well as tires and gasoline in the movement of patrons to and from the track, and in the movement of the horses and their attendants."

Frisco Tells Employees How to Treat the Wounded

In an effort to instruct employees in the most tactful way of treating wounded servicemen, the St. Louis-San Francisco has sent a reprint of an article by Emily Post entitled, *How to Treat Them*, to all employees who come in contact with the traveling public, including ticket agents, dining car stewards, waiters, train conductors, porters and brakemen. Don't stare, don't point, don't make personal remarks, are the basic rules of good manners mentioned in the article.

Expects Less Traffic in 1945

While the level of traffic in both commodity and passenger transportation in 1945 will depend almost entirely upon the course of the war, little diminution can be expected if fighting continues in both the European and Asiatic theaters throughout the year. This was the forecast of George W. Muller, acting chief of the transportation unit of the Bureau of Foreign and Domestic Commerce, appearing in the January issue of the Department of Commerce publication, *Domestic Commerce*.

In view of the fact that all-time records were established this year, there may be a "moderate decline" in commodity transportation and a "somewhat smaller decrease" in passenger traffic if the war in Europe should end early in 1945, accord-

ing to this writer. This would follow, he said, because cutbacks in production during the remainder of the year would substantially reduce the flow of military freight, while reconversion to civilian output would require several months, and probably would not be fully effective during the year.

Mr. Muller estimated that Class I railroads performed about 740 billion revenue ton-miles in 1944, an increase of 1.8 per cent over 1943. However, this year's fourth quarter freight volume was about 1.6 per cent below the comparable 1943 figure, he pointed out. "If Germany is defeated in the spring of 1945, revenue ton-miles might be expected to fall to about 650 or 675 billion for the year, a decline of 9 to 12 per cent below 1944. However, if the war in Europe is not concluded before 1946, the indicated freight volume is approximately 720 billion revenue ton-miles, 2.7 per cent lower than in 1944."

Terming his figures "examples of possibilities" rather than estimates, the writer suggested that a decrease of 5 to 10 per cent in passenger movement may occur in 1945, the net effect of some drop in troop movements and the same or slightly increased volume of civilian travel. This would mean a 1945 total of about 86 billion passenger-miles, as compared to an estimated 96 billion in 1944.

"It must be emphasized that if the war with Germany lasts through 1945, not only the western carriers, but all transport agencies will be hard pressed to meet the demands imposed upon them," Mr. Muller observed. "Conditions at the close of the European war, however, will pose a major problem for the western carriers. When the Nation's military effort is concentrated against Japan, the western transcontinental lines will face even greater traffic demands than the record volume already offered."

Mr. Muller discussed the problems confronting transport agencies other than the railroads and found that the volume of intercity freight and intercity passenger traffic carried by them is not likely to change greatly in the aggregate during

1945 as compared with 1944. Tire shortages still loom as the "greatest threat to expanded operations" of intercity busses and trucks, he said.

The volume of water transportation is expected to rise slightly under the impetus of increased river traffic resulting from operation with new equipment added in 1944 and probable expansion of the coast-wise trade after the close of the European war. The only transportation agency still showing rapid increases from month to month is the air carrier, and some further increases will occur in 1945 as more and more equipment is diverted to civilian operation, according to Mr. Muller.

Parmelee Takes Over Gormley's War Manpower Job

Dr. Julius H. Parmelee, director of the Bureau of Railway Economics, has been appointed an alternate management member of the War Manpower Commission's Management-Labor Policy Committee. He will serve as alternate for R. Conrad Cooper, assistant vice-president of the Wheeling Steel Corporation, succeeding M. J. Gormley, executive assistant of the Association of American Railroads who is retiring on December 31.

Embargo Tank Cars to Mexico

The Office of Defense Transportation has directed that no tank cars shall be allowed to go into Mexico, loaded or empty, except as required for the transportation of "essential liquids" into that country, and the Car Service Division of the Association of American Railroads has issued Embargo 950, effective January 3, 1945, prohibiting movement of tank cars into Mexico except under permit. The general embargo on carload freight movements into that country had previously covered tank cars, but they have been excluded from its application in view of the new embargo.

The embargo covers all tank cars, except when moving under permit, with the exception of Mexican-owned cars being returned empty after having been received under load in this country. Chairman Kendall of the Car Service Division has informed all railroads that empty tank cars should not be accepted for movement to Mexican gateway points, when intended for delivery to Mexican roads, except when authorized by permit, and that the embargo applies to all cars, including those carrying Mexican marks, when moving empty on regular revenue billing.

Draft Boards' Orders Revised

Declaring that a critical situation demands that civilians remain in war supporting industries or obtain war supporting employment if they are not already so engaged, national headquarters of Selective Service has sent a memorandum and revised regulations instructing local boards as to the procedure to be followed in meeting the request of director of war mobilization and reconversion James F. Byrnes that men eligible for induction but not in the armed services "meet their war responsibilities."

The memorandum called for an "ever

increasing war effort," particularly on the part of men in the 26 through 37 age group, and stressed that there will be a much larger proportion of inductions from this age group after February 1.

The memorandum declared that requirements of the armed forces and of war production make it imperative that local boards fill calls for the armed forces—by reclassification as it becomes necessary—of men in the older age groups who do not meet a stricter application of existent memoranda in the light of the immediate urgencies.

To meet the vital need for men for war production and for the armed forces, the local boards were instructed to give greater deferment consideration to registrants 26 through 37 who are engaged in war production, or in support of the war effort, than to those engaged in activities not supporting immediate prosecution of the war. Registrants who are now in war supporting industries must stay or run the risk of losing their occupational deferment classifications, the revised regulations provide, and the rules for occupational deferment are to be applied with much stricter interpretation than in the past. The local boards were also reminded that registrants of lesser skill in activities directly supporting the war effort may be found more important to the war effort than those of greater skills in other activities not in direct support of the war effort.

I.C.C. Service Orders

The Interstate Commerce Commission has extended the effectiveness of its Service Order No. 80, establishing a permit system on grain shipments, to December 31, 1945, by Amendment No. 27 to that order. By Service Orders Nos. 264-267, inclusive, effective December 26, the commission directed the four principal railroads serving Los Angeles to unload "forthwith" a total of 68 specified cars loaded with Australian wheat on hand at

that point "an unreasonable length of time."

Deviations from the restrictions of Service Order No. 262 on re-icing refrigerator cars loaded with Florida citrus fruits have been authorized by general permits Nos. 1, 2, and 3, the first two expiring April 1, 1945, and the third on May 1. The first authorized standard refrigeration on mixed shipments of citrus fruits when tangerines or temple, king or clementine oranges make up at least 50 per cent of the load; the second authorized standard refrigeration on straight carloads of temple, king, or clementine oranges, tangerines, satsumas, or mandarins; and the third authorized one re-icing on cars consigned to points north of the Potomac or Ohio or west of the Mississippi Rivers, provided such re-icing is done within specified limits.

Revised Service Order No. 259 has been issued by the Interstate Commerce Commission, supplanting No. 259 on December 19. This order restricts carload shipments of potatoes from specified western storage points, except on War Food Administration permit. The revised order carries a May 1, 1945, expiration date. It also indicates that the original request of the W. F. A., supported by the Office of Defense Transportation, has been reiterated on the ground that urgent needs of the armed services require the shipment of about 5,000 carloads of these potatoes to western dehydration plants and to ports of embarkation for shipment overseas. A "tremendous saving in car-miles and car-days" will result from diversion of shipments to such western destinations and away from commercial destinations east of the Mississippi, according to Food Administrator Marvin Jones.

The commission's Service Order No. 262, effective from December 24 to August 31, 1945, inclusive, unless modified or suspended by further order, prohibits re-icing, after the first or initial icing, of refrigerator cars loaded with citrus fruits originating at Florida points.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since December 18, and which are of interest to railroads:

Electrical Appliances—Members of the Electrical Appliance Industry Advisory Committee have recommended that the W. P. B. allow their industry to order in advance, on AA-3 ratings, material that will be needed for civilian production after the defeat of Germany. Indicating that makers of domestic electrical appliances expect to maintain post-war employment at 25 per cent above 1940 levels I. A. C. members urged that this preparatory step toward reconversion be taken as soon as military considerations permit.

Hardwood Lumber—Additional controls over the distribution of hardwood lumber were established by the amendment of Direction 6, to L-335, which now requires mills producing 5,000 f. b. m. or more per day of lumber of any kind to sell hardwoods only on certified orders, because of increasing demand for hardwoods and the growing tightness of lumber in general.

Mills cutting less than 5,000 f. b. m. of hardwood per day are required to accept certified orders; they may also sell hardwoods on uncertified orders if delivery does not interfere

with filling certified orders. The supply of hardwoods was relatively ample in relation to demand during the summer of 1944 but recent increases in demand and a drop in production of the better grades have reversed this situation.

Linseed Oil Substitute—Linseed replacement oil may be sold in 55-gallon drums on a drum-included basis, with an extra charge for drums, provided the purchaser is willing to buy in this manner, according to Amendment 196 to RSR-14, which becomes effective December 26.

Track-Laying Tractors—Prospective purchasers of new track-laying tractors are no longer required to submit to their suppliers original, certified or photostatic copies of their approved applications for purchase authorization. After authorization has been received, a simple certification may be made with the purchase order if preferred, stating that the purchase is "authorized under Order L-53 on Form WPB-1319, Case No. —."

The change in procedure, effective by Order L-53 as amended on December 18, standardizes procedures for all three of the construction machinery orders, L-192 (Construction Machinery and Equipment), L-53 (Track-Laying Tractors) and L-53-b (Repair Parts for Track-Laying Tractors), W. P. B. said.

GENERAL NEWS

Somervell Outlines Construction Plan

Army engineers have done vast amount of railway work in combat zones

In an address before the Metropolitan Section of the American Society of Civil Engineers at New York on December 20, Lt. Gen. Brehon Somervell, commanding general, Army Service Forces, reviewed the gigantic engineering and construction programs required in this country and overseas to wage battle successfully on all fronts. Referring specifically to the construction program in the United States, General Somervell stated, "The highly successful completion of that program and the record-breaking time in which it was completed, set a high water mark in the history of the civil engineering profession and the construction industry of this country."

"A construction program of 11 billion dollars, the raising and training of 700,000 engineer troops and the provision of construction equipment and supplies have been outstanding achievements. But these were only the preparatory steps in the role of engineers in this war. The end-result is in the active theaters of operations overseas. Let us look for a few minutes at what our engineers are doing around the globe."

"In France and Italy, we find them performing all the usual engineer functions that go with a modern army. Engineer troops participated in the initial landing in Normandy. Much hasty and arduous construction work was necessary to fix the beachheads so that the vast volume of supplies and equipment could be unloaded and moved forward. The construction of airfields in France began with the first few hours of the invasion. To date, over 130 airfields have been constructed in France. Roads have been built, railroads have been repaired and operated, ports have been reconstructed and opened up to shipping. The communications network, partially destroyed by the Germans, has been restored and is in operation. Facilities for the storage and handling of supplies and equipment have been constructed."

"One railroad line ran south from the Normandy peninsula into the heart of France. The Germans destroyed this line systematically as they retreated. Our own Air Forces had helped by blasting many bridges and yards. On August 13 this year, the German lines broke and fell back and our spearheads took after them. The breakthrough disorganized the enemy. If we could exert continuing pressure, following up our early advantage, our field commanders realized that we could exploit

I. C. Gives Corporate Records to Library

The Illinois Central has turned over to the Newberry Library at Chicago all of its corporate records from its incorporation in 1851 to 1906. In time the material will be catalogued by the library and made available to qualified research students.

The initial deposit consists of 6½ tons of material, including the correspondence of the presidents of the railroad (which is complete for the entire 55-yr. period except for a single lapse of 5 mo.), together with existing records of construction, colonization, operation, financial transactions and other corporate affairs.

those early gains. But it required great quantities of munitions and supplies to continue the push. We had these on the beach and it was necessary to haul them forward somehow. The roads were few and badly battered; not equal to the task.

"General Patton on the morning of the 13th asked the impossible. He insisted that the railroad be rebuilt and the munitions trains start running in 48 hours. The Engineers agreed to try. The job they set themselves was this: grade and lay the ties and tracks on some 45 miles of line so badly blasted by our guns and the enemy's, and by our bombers, that many miles of it amounted practically to laying a new line; build seven bridges; reconstruct three railroad yards; and provide watering facilities where water towers had been destroyed."

"Forty-eight hours after the order to rebuild the line had been received, the first trainload of supplies rolled across the new bridge at Ste. Hilaire de Harcourt, the last of the seven bridges to be replaced. Ahead lay a clear line all the way to the Seine."

Continuing, General Somervell paid tribute to the work done in modernizing the Iranian State Railway, which "turned it into an efficient 1,000-mile fast freight system with a capacity of 130,000 tons per month," and also outlined the communications problems in India, Burma and Pacific.

Service Order Violation

A December 13 announcement by Secretary W. P. Bartel stated that the Interstate Commerce Commission had been advised that the New York, New Haven & Hartford on November 7 paid a penalty of \$500 in full settlement of an action pending in the federal district court for violations of Service Order No. 178, which were investigated by the commission's Bureau of Inquiry. This order prohibited the transportation of empty beer containers in type-RS refrigerator cars.

A.T.A.'s Ted Rodgers Raps Integration Idea

Calls it railroad scheme to grab control of other modes of transport

Ted V. Rodgers, president of American Trucking Association, Inc., this week issued his year-end statement, reviewing one of the trucking industry's "most critical years," and otherwise characterizing 1944 as a time when the industry "withstood the threat to its existence of wartime shortages only to find itself harassed by monopolistic interests who would like to slice it up and serve it on a silver platter to its competitors." Mr. Rodgers was referring to proposals, such as that of the Transportation Association of America, for the creation of transportation companies with authority to provide all types of transport service.

He did not, however, mention T. A. A. "For a number of years," he said, "the railroads have been trying to get their fingers on competing modes of transportation, but until now they have been limited by the anti-monopoly safeguards written into our transportation laws by Congress to restrict ownership of one type of carrier by another. In 1944, the railroads and their friends came out in the open with a concerted drive to remove these safeguards preliminary to establishment of huge rail-dominated 'transportation corporations' that would control trucks, boats and airplanes and any other facilities which might fit into their scheme to dominate American transportation."

Sees Private Carriers Destroyed—"Fulfillment of the scheme could mean only absorption or elimination of independent for-hire motor carriers. Among its objectives is ultimate elimination of private motor carriers such as dairies or oil companies or other producers who use their own private trucks to haul their own products."

Mr. Rodgers pointed out how the trucking industry "has joined with the airlines, the boatlines, farm organizations and others in combatting this threat to free enterprise and the competitive system in transportation." This is because of a belief that integration proposals constitute "a distinct threat not only to the future of our industries but also to the future welfare of the nation." A. T. A. also believes that "if the facts are made known," the public "will not tolerate restoration of transportation monopoly and stifling of new and in many ways superior methods of transportation."

Among other trials of the for-hire truckers, it appears, have been those arising

from the failure of the Interstate Commerce Commission to understand them. "A serious problem," Mr. Rodgers said, "has been created by inability to make proper adjustments in the rate level to offset rapidly rising expenses. In many instances during 1944, the Interstate Commerce Commission refused to permit adjustments proposed by individual motor carriers in an effort to alleviate their difficulties, and the result has been a growing feeling within the industry that the commission either does not fully understand or does not properly sympathize with the industry's financial problems."

Raps the I. C. C.—"This feeling can be traced back to the years just preceding the war when the railroads were permitted to conduct a ruinous rate-cutting campaign in an obvious effort to squeeze highway competitors out of the field. The commission has been charged by Congress with the duty of fostering healthy competition in transportation, and motor carriers have found it difficult to understand why the commission has countenanced the destructive competitive practices which have prevailed."

The Rodgers statement proceeded to discuss various other matters of concern to truckers, such as costs of operation, the outlook for new equipment, manpower, and the tire situation. Since the industry got through 1944, its period of "crisis," Mr. Rodgers thought there remained "little doubt" about its ability "to carry through to the end."

"Viking" Derailed

One person was killed and 21 were injured when the "Viking" of the Chicago & North Western, en route from the Twin Cities to Chicago was derailed 1½ mi. east of Poplar Grove, Ill., at 7:45 p. m. on December 24. The 15-car train was moving at the rate of 50 m.p.h. when the twelfth and thirteenth cars, coaches, left the rails and rolled down a 15-ft. embankment. The last two cars were derailed but remained upright. Only one of the two coaches which overturned carried passengers. The cause is believed to have been a broken rail.

Putting Some Order into Salt Rates from Kansas

Passing upon the complaint of a salt producer who "prefers to ship by rail," but "has been obliged, because of competition, to make extensive use of motor carriers," the Interstate Commerce Commission, Division 2, has issued a report and order requiring certain changes in motor carrier minimum weights, tariff descriptions, rules and regulations covering the transportation of salt and salt mixtures from Hutchinson, Kans., Kanapolis, and Lyons to points in Kansas, Arkansas, Oklahoma, Missouri, Iowa, Nebraska, Wyoming, Colorado, and New Mexico. The report and order are in No. 28716 and related proceedings.

The objective of the complainant, Morton Salt Company, was "not to secure reductions in rates, but, on the contrary, to promote establishment of minimum rates from the Kansas field by rail and motor carriers, and uniform rules and regulations to govern them, in order to avoid

controversies with respect to rates from other producing fields, and to terminate present rate difficulties between rail and motor carriers, also between motor carriers themselves, growing out of unrestrained competition for traffic." In noting Morton's preference for the rails, the report says that the effect of the use of motor carriers "has been to diminish the unit of sale and increase the expense of conducting the salt business."

The commission did not meet the request for the establishment of minimum rates, for it found that the present rail and motor carrier rates had not been shown to be unreasonable or otherwise unlawful. The report's minimum-weight requirement stipulates truckload or so-called quantity shipments shall be subject to minimum weights of not less than 20,000 lb. Among the motor carrier practices condemned or required to be modified are those relating to pick-up and delivery service, sacking in transit, stopping in transit to complete loading or to partly unload, split deliveries, the collection and remittance of so-called c.o.d. charges to shippers, and the application of rates to intermediate points not named in tariffs.

The majority report represents the view of Commissioners Aitchison and Splawn. Commissioner Alldredge dissented, expressing his disagreement with the decision "insofar as it fails to require increases in both the motor and rail rates to a reasonable level." He noted the "general recognition on the part of the shippers that the present line-haul rates are less than reasonable and, in many instances, are non-compensatory." Mr. Alldredge also referred to the unfavorable financial condition of motor carriers in the territory involved.

Prescribes Wider Spread for Rates on Cotton

Carload rates on flat cotton, minimum 35,000 lb., from origins in the Southwest and Mississippi Valley to destinations in the Southeast and Official territory must be made at least 10 cents per 100 lb. higher than comparable rates on compressed cotton, minimum 50,000 lb., according to the Interstate Commerce Commission's decision in the No. 28800 proceeding. The spread has heretofore been from six to 15 cents per 100 lb.

Complainants and supporting interveners in the case were associations of cotton merchant-shippers, compress-warehouse operators, and community organizations located in the Southwest and Mississippi Valley. Complaining primarily about the six-cent spread, they contended that it did not give appropriate weight to the loading possibilities of the compressed as compared with the flat cotton, and therefore resulted in undue disadvantage to those shipping compressed as compared with flat cotton. They also asserted that "if the spread is not increased to a proper basis, the traffic will be gradually diverted to movement in flat form under the 35,000 lb. minimum, resulting in the eventual abandonment of the compress-warehouse facilities in the origin territory, to the detriment of the carriers and all others concerned."

The "primary concern" of the railroads was that there should be no reduction in

Freight Car Per Diem Rate to Become \$1.15

The freight car per diem rate will be increased from \$1 to \$1.15 on January 1, 1945, according to the notice served in Circular T-160-B which has been issued by Executive Vice-chairman L. R. Knott of the Operating-Transportation Division, Association of American Railroads. The increase was recommended by the A. A. R. board of directors and approved by member roads.

rates in connection with the 50,000-lb. minimum. In this connection the commission found such rates generally just and reasonable, requiring only that they be made no higher than 75 per cent of corresponding any-quantity rates in instances where they exceed such a basis. Thus the wider spread will be accomplished by increasing the 35,000-lb. minimum rates where such rates are now less than 10 cents above the 50,000-lb. minimum basis. The commission refused to award reparations, there being "no basis on this record for a finding of unreasonableness in the past."

Commissioner Alldredge, dissenting in part, agreed that the 50,000-lb. minimum rates should be adjusted downward where they are now above 75 per cent of corresponding any-quantity rates. As to the spread between the 35,000-lb. and the 50,000-lb. rates, he found cost evidence indicating that the "full measure of economy" in the transportation of the heavier carloads is not reached "short of about 1,200 miles." Up to that point, "if costs are to control," he said, the differential should start at something like three cents and gradually increase. Thus Mr. Alldredge found "no justification for condemning the present six-cent spread from the origin territory involved to the Southeast," but he did agree with the majority view "as to the 10-cent spread insofar as rates to Official territory are concerned."

Commissioner Lee joined in the Alldredge expression, while Commissioners Aitchison and Barnard did not participate in the case.

Distinguishing Regular from Irregular-Route Carriers

Division 5 of the Interstate Commerce Commission has invited interested parties to shoot at a "tentative report" which it has issued in a case involving the question of what constitutes a regular-route trucking service in contradistinction to an irregular-route operation. The tentative report is in No. MC-C-246, Transportation Activities of Brady Transfer & Storage Company.

The proceeding was instituted by the commission to investigate the "reputed" furnishing by Brady of unauthorized regular-route service. The service involved is between St. Paul, Minn., and Minneapolis and Fort Dodge, Iowa, and Spencer. Brady has irregular-route authority to operate between the Twin Cities and points in Iowa, but its business there has grown so rapidly and become so organized as to constitute

what the tentative report finds to be a regular-route operation.

To point up the general question of the distinction between regular and irregular-route operations, the report goes on to discuss "certain practices which tend to serve as criteria" of the character of regular-route operations. These include a predetermined plan of operations; the character of traffic; solicitation; terminals and call stations; adherence to fixed routes; periodicity of service; and the adherence to schedules or their equivalent.

The report was made "tentative" because of the "nationwide importance of the principles involved," said an accompanying notice from I. C. C. Secretary W. P. Bartel. Interested parties, without formal intervention, are invited to file exceptions or briefs on or before February 20, 1945. There will be no reply exception or briefs.

Representation of Employees

The Brotherhood of Railroad Trainmen has supplanted the Order of Railway Conductors as the Railway Labor Act representative of road conductors employed by the International Great Northern, according to results of a recent election which has been certified by the National Mediation Board. In another recent election, the O. of R. C. successfully met a B. of R. T. challenge and retained the right to represent Maine Central road conductors.

On the Carbon County, organizations operating through the Railway Employees Department, American Federation of Labor, have been certified as collective bargaining agents for machinists and carmen.

More New Trucks in 1945

The War Production Board has disclosed its 1945 commercial truck production program, which calls for an increase over the 1944 output in all classes of highway trucks but a decrease in general freight trailers. It was pointed out, however, that production of any trucks in the third and fourth quarters of 1945 by any manufacturer in any plant in excess of the number authorized for that plant in the final quarter of 1944 may be undertaken only after manpower clearance with the so-called production urgency committee for the area involved.

The program announced contemplates resumption of manufacture of light trucks in 1945. None of this type were made this year. Of 40,000 scheduled for production next year, 35,904 are listed for domestic use, the remainder apparently representing export allotments. The domestic output of medium trucks is scheduled at 110,114 for next year, as compared to 73,788 in 1944, while the total commercial medium truck allotment, including domestic and export uses, is 144,181 as compared to 90,663.

Heavy trucks are listed in several categories. So-called light-heavy types are scheduled 31,684 for domestic use and 49,314 for all commercial purposes, as compared to 1944's 20,209 and 26,677, respectively. Total heavy-heavy schedules are 11,954 for 1945 (of which all but 773 are for domestic use), as compared to 9,338 this year. Thus total scheduled output is 245,449 trucks in 1945, of which 188,883

are listed for domestic use, as compared to 126,678 and 103,112, respectively, in 1944.

The general freight trailer program is set at 14,304 for domestic use in 1945, as against 22,840 in 1944. The schedule for all other types (such as pole, oil tank, milk tank, and special machinery trailers), is 5,000 for next year as against 3,151 in 1944, these figures being for domestic use. The total commercial program for 1945 is 15,800 of the general freight type and 5,686 of other types, bringing the total scheduled trailer output to 21,486 as compared to 29,067 this year.

Equipment on Order

Class I railroads on December 1 had 28,910 new freight cars on order, according to the Association of American Railroads. On the same date last year, they had 36,253 on order.

This year's December 1 total included 9,523 hopper, 3,054 gondolas, 200 flat, 12,218 plain box cars, 1,345 automobile box cars, 2,213 refrigerator, and 357 stock freight cars.

The Class I roads also had 495 new locomotives on order on December 1, compared with 1,004 on the same day in 1943. The former figure included 90 steam, two electric and 403 Diesel-electric locomotives, compared with 387 steam, three electric and 614 Diesel-electric locomotives one year ago.

Class I roads put 35,972 new freight cars in service in the first eleven months this year compared with 26,433 in the same period last year. Of the total installed so far this year, 5,140 were installed in November. Those installed in the first eleven months included 14,698 hopper, 3,735 gondola, 1,315 flat, 2,863 automobile box, 12,768 plain box, 143 stock, 449 refrigerator freight cars and one other car.

They also put 846 new locomotives in service in the first eleven months of 1944, of which 305 were steam, one electric and 540 Diesel-electric. New locomotives installed in the first eleven months of 1943 totaled 656, of which 380 were steam, 15 electric and 261 Diesel-electric. New locomotives installed in November this year totaled 63, of which 18 were steam and 45 were Diesel-electric.

Holiday Travel Heavy Again This Year

Standing room only signs were no deterrent to onrushing Christmas holiday travelers in the western territory this year with the result that the aisles of many trains were completely filled. In general, holiday travel this year was spotty with some railroads reporting less traffic than during the same period last year and others experiencing gains of as much as 15 per cent. As in the last three years, travel was mostly servicemen on furlough and relatives visiting camps, with the back-home traveler contributing as usual.

Among the trains whose standing room was filled were two Santa Fe trains which left Chicago for Dallas and the South. A total of 800 persons were aboard although the seating capacity was only 485. On a Wabash train out of St. Louis, 400 persons insisted upon riding in three coaches.

At the Chicago terminal of the Illinois Central about 3,000 persons jammed the station seeking transportation on December 22. A large number of persons succeeded in boarding the New Orleans train which left at 7:45 p. m. but several hundred were still waiting when the train pulled out 20 min. late.

Seatrain Again Asks I.C.C. to Revoke S.P. Certificate

Contending that the recently published report of the House committee on merchant marine and fisheries concerning the sale of Southern Pacific Morgan Line steamships to the United States Maritime Commission (noted in *Railway Age* of December 16, page 939) provided additional evidence pertinent to the case, Seatrain Lines, Inc., has asked the Interstate Commerce Commission to reopen the proceedings in which Division 4 granted the Southern Pacific a grandfather clause certificate covering coastwise steamship operations. This authorization was based on misrepresentation, Seatrain asserted, because, it insisted, Southern Pacific did not in fact cease service for reasons beyond its control before the grandfather date, as the road had contended. The commission has been asked to reverse the division's finding.

War Powers Act Approved

President Roosevelt has signed the recently-enacted bill extending the Second War Powers Act with its provisions granting the Interstate Commerce Commission certain emergency powers over motor carriers and water carriers.

First-Quarter Tire Requests Expected to Be Halved

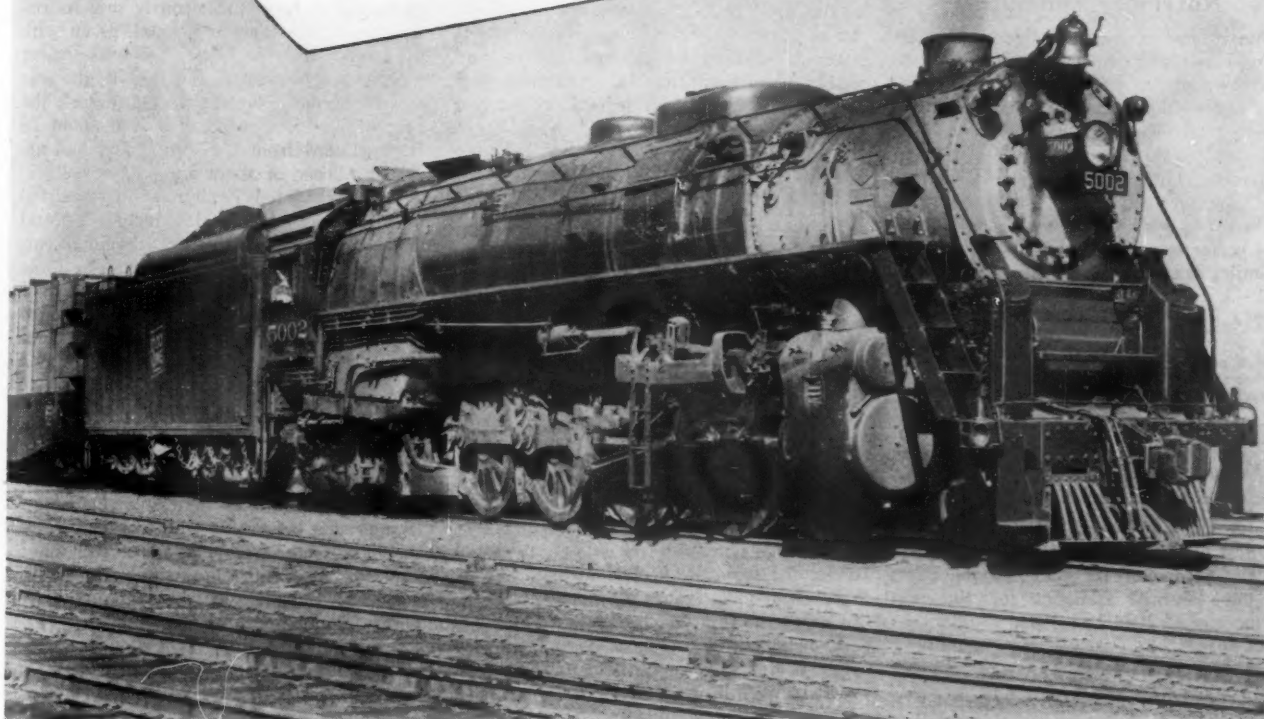
Present indications are the commercial motor vehicle operators will receive only about one-half of their estimated tire requirements during the first quarter of 1945, according to Director Johnson of the Office of Defense Transportation. The O. D. T. request is for 2,241,889 tires for the first quarter, but Colonel Johnson finds "current negotiations" indicating that the allocation may fall short of that figure by close to a million tires.

The urgent military demand for tires for combat vehicles, trucks, jeeps and other military transport was given as the reason for the drastic cut. Meanwhile, Colonel Johnson declared that the situation, the "most critical since the war started," presents a challenge to all commercial motor vehicle operators "to make the greatest effort possible to continue and to step up their tire conservation activities."

Pacific Coast Traffic Sets New Record in November

Civilian and military freight traffic to the Pacific Coast set a new record in November when an average of 4,795 carloads a day, consisting of 3,369 to California and 1,426 to the Pacific Northwest, were handled over western railroads, according to William F. Kirk, western director of the Railway Transport department of the Office of Defense Transportation. This compares with 3,266 cars to

**STILL FASTER
TRANSPORTATION**
will be the Post-War Demand



To meet the post-war transportation problem of moving freight both more rapidly and more economically, modern equipment will be an absolute essential.

The most efficient type of motive power will be needed—steam locomotives that can

haul heavy trains at high speeds on long runs.

Lima Super-Power 4-8-4s are built for just such work and have already thoroughly proved their capacity for maintaining exacting schedules in the handling of both freight and passenger traffic.



LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

California and 1,314 to the Pacific Northwest or a total average of 4,580 a day in October 1944; 2,855 to California and 1,223 to the Pacific Northwest or a total average of 4,078 a day in November 1943; and 2,456 to California and 996 to the Pacific Northwest or a total average of 3,452 cars a day in March, 1943, when the first figures were compiled.

This volume, Mr. Kirk said, has been handled despite a shortage of 25,000 workers on western railroads. "The railroads," he continued, "are hauling all the freight given them, with less delay than a year ago. In addition to the heavy military burden, they are carrying the loads normally handled by coastal shipping and oil tankers, a record grain crop and immense ore shipments."

November Ton-Miles

The volume of freight traffic handled by Class I roads in November amounted to approximately 59,400,000,000 revenue ton-miles, according to a preliminary estimate based on reports just received from the railroads by the Association of American Railroads. The decrease under November, 1943, was one per cent.

Class I roads in the first 11 months of 1944 performed two per cent more revenue ton-miles of service than in the same period of 1943. The 1944 total was 17 per cent

	1944	1943	Per cent Increase
First 9 months	556,914,742,000	541,316,492,000	2.9
October	63,500,000,000	65,225,870,000	d2.6
November	59,400,000,000	59,860,574,000	d0.8
11 months' total	679,814,742,000	666,402,936,000	2.0

¹ Revised estimate.

² Preliminary estimate.

greater than 1942 and 2½ times that of the first eleven months in 1939.

The accompanying table summarizes revenue ton-mile statistics for the first 11 months of 1944 and 1943.

Cuts Differential on Coal, Western Ky. to Chicago

Reporting on rehearing in the No. 28629 proceeding, the Interstate Commerce Commission has reaffirmed findings of its prior report of December, 1942, cutting, from 35 cents per ton to 25 cents, the spread between rates on southern Illinois and western Kentucky coal moving to Chicago and intermediate Illinois and Indiana destinations taking the same rates. The order requires that the rate from western Kentucky be cut from \$2.40 per ton to \$2.30, the rate from southern Illinois fields remaining at \$2.05.

Commissioner Porter filed a dissenting opinion to which Chairman Patterson and Commissioner Miller subscribed, and the dissent of Commissioner Aitchison was noted. Commissioner Mahaffie concurred "in the result" of the majority report, while Commissioner Barnard did not participate in the case.

O. D. T. Offers McNear Monthly Payments for Expenses

Director J. Monroe Johnson of the Office of Defense Transportation has authorized a cash advance of \$5,000 each calendar

month to the Toledo, Peoria & Western corporate organization, according to a letter to the director of the Bureau of Finance of the Interstate Commerce Commission, Oliver E. Sweet, from the O. D. T. chief counsel, Clair M. Roddewig.

This payment, "it is hoped," will be sufficient for the corporation to pay all its corporate obligations, other than taxes and debt service, which the federal manager of that road heretofore has paid direct, this letter went on to say. However, it added, Director Johnson has refused to advance \$4,900 per month to the corporation to cover executive salaries, as such payment is not considered necessary in the company's interest.

This information was supplied Director Sweet in connection with the pending application of G. P. McNear, Jr., president of the T. P. & W., for commission authority to obtain a loan to meet corporate expenses, including executives' salaries, and marks a further step in his controversy with the O. D. T. over federal seizure and operation of the road.

Engineer Ignores Rule—Rear End Collision Results

An Interstate Commerce Commission finding that the accident was caused by failure properly to control the speed of the

a point about 300 ft. to the rear of his train.

Three automatic block signals were included in circuits designed to protect No. 5; these were placed 20,804 ft., 3,663 ft., and 245 ft. east of the point of the accident. The two more distant signals displayed an approach (yellow) signal aspect to No. 61, while the home signal's aspect was red, indicating stop and proceed. The maximum authorized speed for No. 61 was 55 m.p.h., but the rules required its speed to be so controlled, after passing an approach signal, that it could be stopped at the next signal. The first approach signal was passed at a speed of about 35 m.p.h. and the second, about ¾ mile east of the preceding train, at about 25 m.p.h. The engineer took no action to reduce speed further until, at a point about 500 ft. east of the home signal, he simultaneously saw its red aspect and the flagman's signal, given with the fusee. He then moved the brake valve to emergency position, but the freight was moving about 15 m.p.h. when it struck the rear of No. 5, which had moved about 20 ft. westward from the station and had attained a speed of about 5 m.p.h.

The articulated Zephyr train consisted of the power unit, which included postal and baggage compartments, a baggage car, a coach, and a coach-lounge car. The force of the impact crushed the rear portion of the rear car a distance of about 21 ft. The front end of the first unit of the freight locomotive was slightly damaged.

In explanation for his failure to control the speed of No. 61 as required by rule, the engineer said that he thought that No. 5 would have proceeded far enough west of Fairmont for the aspect of the signal nearest the point of the accident to have changed to approach before his train reached it. If the speed of the freight had been controlled in accordance with signal indications, this accident would not have occurred, the report observed.

U. P. Dining Car Thefts Amount to \$500,000

A total of \$500,000 is the estimated loss per year resulting from irregularities that were practiced by 135 waiters, stewards and chefs who were employed on the Union Pacific and who were arrested by the Federal Bureau of Investigation. The estimate is based upon normal receipts plus that average increase in revenue per passenger.

Water Carrier Status Decision

Reporting on reconsideration of the No. W-157 proceeding, the Interstate Commerce Commission has found that American Range-Liberty Lines, Inc., a "tramp ship" operator along the Atlantic and Gulf of Mexico coasts, is a contract carrier, thereby reversing the prior report by Division 4 which held that the applicant was a common carrier. In granting a "grandfather-clause" permit authorizing continuance of the operations, the commission limited service to the carriage of specified commodities "in lots of 500 tons or more for not more than three shippers on any one voyage."

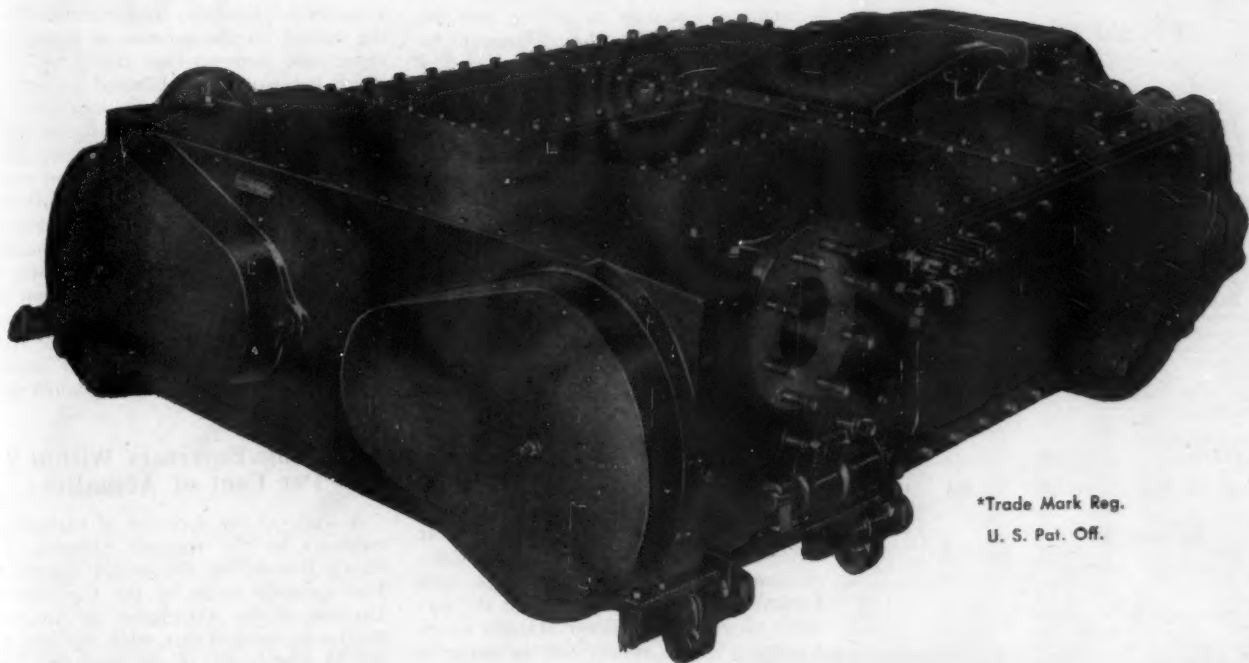
Commissioner Mahaffie filed a lengthy

following train in accordance with signal indications concluded its report, prepared under the supervision of Chairman Patterson, of an investigation of a rear end collision on the Chicago, Burlington & Quincy November 12 at Fairmont, Neb., in which four passengers were killed and six passengers were injured.

Fairmont is 63 miles west of Lincoln, Neb., on the single-track main line from that point to Denver. The track is tangent and there is a variable ascending grade for westbound trains, not exceeding 0.36 per cent, approaching Fairmont, but the line is level in the vicinity of the station. Trains were operated by timetable, train orders, and an automatic block signal system, the signals being of the three-indication, color light, continuously lighted type. The accident occurred at 1:13 p. m., but visibility was limited by dense fog to about 700 ft.

The trains involved were No. 5, westbound, the Diesel-powered, streamlined "Pioneer Zephyr," which was being operated in local service between Lincoln and McCook, and a 115-car westbound freight, No. 61, pulled by a 4-unit Diesel-electric locomotive. No. 5 had stopped at Fairmont station about 11 min. before the collision occurred, and its crew, except for the flagman, were occupied with head-end business. The flagman had gone about 300 ft. to the rear, but had started to return to his train, in response to a whistle signal, when he heard the freight approaching. He gave stop signals with a lighted fusee from

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special starting feature enables the new Type "E" Booster to develop full initial starting effort, and a new air control assures efficient Booster operation, and engagement at higher speed.

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dissenting expression to which Commissioners Porter and Miller subscribed. He thought that "one holding out to transport so wide a range of commodities for so large a group of manufacturers should, under the circumstances here shown of record, be held to be a common carrier." Moreover, Mr. Mahaffie found no authority in the law for confining a voyage's service to not more than three shippers, "any more than there is for holding that a contract carrier must confine its operations exclusively to one shipper." He asks: "Is it to be assumed that if applicant transports for more than three shippers on any one voyage it then becomes a common carrier?"

Freight Car Loading

Loadings of revenue freight for the week ended December 23 were not available at the time this issue went to press.

Loading of revenue freight for the week ended December 16 totaled 749,883 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading			
For the Week Ended Saturday, December 16			
District	1944	1943	1942
Eastern	142,347	146,362	140,674
Allegheny	155,182	164,731	156,248
Poconchos	39,519	55,311	52,169
Southern	120,760	116,235	117,069
Northwestern	87,759	84,671	82,460
Central Western	129,792	120,285	121,858
Southwestern	74,524	71,286	72,583
Total Western Districts	292,075	276,242	276,901
Total All Roads	749,883	758,881	743,061
Commodities			
Grain and grain products	44,678	48,573	47,688
Live stock	19,234	17,091	15,660
Coal	142,863	177,079	163,523
Coke	13,145	14,759	14,763
Forest products	39,409	41,779	41,498
Ore	11,115	12,281	13,855
Merchandise l.c.l.	102,058	98,730	87,191
Miscellaneous	377,381	348,661	358,883
December 16 ..	749,883	758,881	743,061
December 9 ..	793,554	823,311	744,183
December 2 ..	808,260	862,733	759,731
November 25 ..	768,730	819,832	743,464
November 18 ..	864,373	882,287	836,762

Cumulative Total,
51 Weeks.... 42,737,534 41,776,644 42,234,992

In Canada.—Carloadings for the week ended December 16 totaled 67,558 as compared with 72,668 for the previous week, and 67,411 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Dec. 16, 1944	67,558	36,329
Dec. 9, 1944	72,668	39,683
Dec. 2, 1944	72,332	38,024
Dec. 18, 1943	67,411	38,686
Cumulative Totals for Canada:		
Dec. 16, 1944	3,543,183	1,923,801
Dec. 18, 1943	3,356,463	2,007,118
Dec. 19, 1942	3,276,525	1,701,864

Navy's Contract Complainant Fails to Deliver Rate Cut

The Interstate Commerce Commission has dismissed the rate complaint which the San Francisco & Napa Valley brought against its connections in accordance with provisions of an operating contract it entered with the Navy Department in 1943. The report is in the No. 29015 proceeding, involving the rates to and from Mare Island, Calif., Navy Yard served by the S. F. & N. V. which connects at Napa

Junction, Calif., with the Southern Pacific.

The complaint assailed the rates to and from Mare Island insofar as they included the S. F. & N. V.'s local rate, asking that through rates to Mare Island be prescribed on the Napa Junction or Vallejo, Calif., basis, whichever was lower, and that the S. F. & N. V. be accorded divisions of such through rates. Examiner F. L. Sharp's proposed report, noted in the *Railway Age* of July 1, page 44, recommended that the commission require the establishment of the arrangements sought by complainant.

The commission, however, rejected this recommendation with its finding that the assailed rates had not been shown to be unreasonable or unduly prejudicial. The S. F. & N. V. local rate had been 5 cents per 100 lb. from 1920 until late 1942 when the Navy arranged to have its traffic transported at a rate of three cents per 100 lb. for the last six months of 1942. The rate for 1943 traffic was set at five cents per 100 lb. for the first 141,000 net tons and three cents per 100 lb. on all traffic over that quantity. This arrangement was cut short by the operating contract, dated May 18, 1943, but made effective as of March 10, 1943. Under the contract the Navy compensates the S. F. & N. V. on an operating - expense - plus - 10 - per - cent basis; and the contract, as the I. C. C. put it, "contains provisions which obligate complainant to file and prosecute the instant complaint, with the collaboration and assistance of the Navy."

The commission's majority report brought dissenting expressions from Commissioners Aitchison and Alldredge, with Commissioner Lee subscribing to the former's views. Commissioner Mahaffie's concurrence "in the results" of the majority report was noted, while Commissioners Porter and Barnard did not participate. Commissioner Aitchison's dissent was based on his disagreement with a majority ruling which upheld the examiner's exclusion of evidence with respect to the counterproposal of the Southern Pacific. The counterproposal renewed a proposal made to the Navy in 1919 that the latter establish a track connection with the S. P. at Vallejo. It was offered, as the majority put it, "in purported compliance with the permission granted in Rule 35 of our General Rules of Practice," which contemplates pleadings reasonably germane to the issues. Because this S. P. evidence was excluded, Commissioner Aitchison was unable to go along with the majority report; he believed there had not been "the full hearing required by section 15(1) of the Interstate Commerce Act."

Dissenter Alldredge thought the assailed rates had been shown to be unreasonable, but he did not believe the record justified the establishment of the Pacific coast base rates to and from Mare Island. He would have required joint rates on the basis of an arbitrary of 2.5 cents over the Vallejo rates. He agreed with the majority ruling which excluded evidence with respect to the S. P. counterproposal, but he thought the reasons underlying the ruling should have been more fully stated. He proceeded to outline a basis for the ruling.

Meanwhile, Mr. Alldredge disagreed with another majority ruling which held that the examiner should have admitted evidence showing the effect of land-grant deductions and equalizations upon the rates in issue.

"The report, in my opinion," he said, "falls into serious error in holding that evidence relating to land-grant deductions and equalizations was admissible. An assumption necessarily underlying this offer by defendants is that they made a bad bargain when they entered into land-grant agreements with the government. Of course, we have no right to accept such an assumption as well founded. That is a matter for Congress to determine. Having opened up the question of land-grant deductions, however, we could not stop there, but would be obligated to embark upon a far-reaching inquiry into the subject with all its complications and ramifications. And a precedent having been set, in each proceeding thereafter in which the railroads might come forward with evidence relating to land-grant deductions, we would be under the necessity of repeating this performance. Such a procedure, of course, would lead us far afield from the issues properly raised in rate proceedings. Any such excursions into fields not committed to us could end only in futility. I feel sure such a precedent cannot prevail in the future."


Loading Forecasts Within 2 Per Cent of Actuality

A study of the accuracy of carloadings estimates by the regional Shippers Advisory Boards for the second quarter of 1944 recently made by the Car Service Division of the Association of American Railroads disclosed that, while the total for the 13 boards was 2 per cent underestimated, the percentage of accuracy of the estimates for certain regions and certain commodities showed much larger variations from the actual figures than the national average would indicate.

The totals by boards varied from 3.9 per cent overestimated to 12.5 per cent underestimated. By commodities the totals varied from 1.4 per cent underestimated to 12.4 per cent overestimated. In disclosing these results, W. C. Kendall, chairman of the Car Service Division, remarked that the "individual board figures of commodities vary in a number of cases by excessive figures." He went on to emphasize the "great need for a maximum of accuracy" in spite of the "problems in connection with the making of forecasts in time of war," and urged continued co-operation of local offices and shipper groups in developing the best obtainable forecast data.

A summary of the results reported for the year 1943, when the over-all national estimates came within 0.01 per cent of actual loadings, appeared in *Railway Age* of July 22, page 175.

Substantial underestimates of national second-quarter loadings of several commodities were indicated in the tabulation of results. Expressed in percentage of accuracy, the totals were underestimated 35.8 per cent for cotton seed and products, 34.1 per cent for poultry and dairy products, 23.5 per cent for agricultural implements



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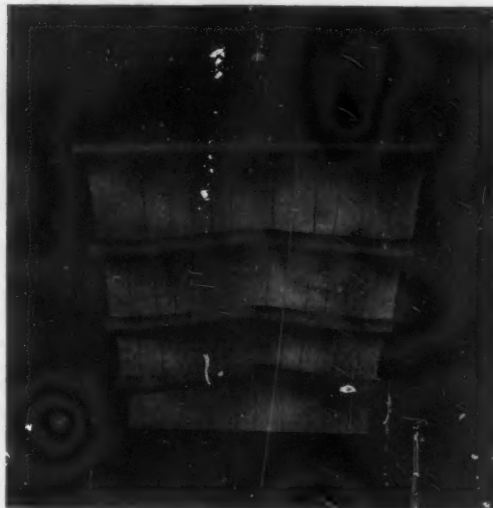
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and vehicles, and 20.8 per cent for canned goods. Overestimates of 11.2 per cent for grain and 12.4 per cent for gravel, sand and stone were the largest in that category. On the other hand, closer results were attained for the commodities showing the largest total loadings, with coal and coke underestimated 2.7 per cent, ore overestimated 5.8 per cent, petroleum and products underestimated 10 per cent, lumber and forest products underestimated 9.7 per cent, and iron and steel underestimated 4.6 per cent.

Comparisons for the regional boards are shown in the accompanying table:

COMPARISON NATIONAL FORECAST
WITH ACTUAL LOADINGS—
SECOND QUARTER 1944

Board	Carloadings Second Quarter 1944		Per Cent of Accuracy over- under	
	Estimated	Actual	Est'd	Est'd
Allegheny	1,092,994	1,166,525	6.7	
Atlantic States ..	622,994	641,518	3.0	
Central Western ..	218,316	218,466	.1	
Great Lakes	494,872	502,950	1.6	
Midwest	889,515	926,320	4.1	
New England	87,777	98,720	12.5	
Northwest	698,627	688,203	1.5	
Ohio Valley	1,055,471	1,014,116	3.9	
Pacific Coast	292,394	301,647	3.2	
Pacific Northwest ..	253,728	258,690	2.0	
Southeast	826,021	820,917	.6	
Southwest	566,859	609,976	7.6	
Trans-Mo-Kansas ..	317,466	317,467		
Total All Boards ..	7,417,034	7,565,515	2.0	

Construction

KANSAS CITY TERMINAL.—Division 4 of the Interstate Commerce Commission has denied this company's application for a further extension to December 31, 1946, of the time within which it must complete construction work at Kansas City, Mo., authorized by a commission certificate. The specified date has been changed from time to time since 1937.

NEW YORK CENTRAL.—This railroad has awarded contracts for grading and drainage in connection with a change of line and grade west of Canastota, N. Y., to the Fred Ballard Construction Company, Syracuse, N. Y., and for extension of electrical power lines, etc., for servicing Diesel locomotives at its Dewitt Yard, Minoa, N. Y., to the Edward Joy Company, Syracuse, N. Y.

SEABOARD AIR LINE.—This railroad has authorized the construction of a coaling-sanding station at Thalmann, Ga., at estimated cost of \$24,500, and the laying of track between Millbrook and Neuse, N. C., at estimated cost of \$22,000.

ST. LOUIS, BROWNSVILLE & MEXICO.—This road has awarded a contract, amounting to \$44,731, to Port Industries, Brownsville, Tex., for construction of an extension to vegetable loading facilities at Russelltown, Tex. Another contract, amounting to \$21,680, has been awarded to the same company for the erection of a one-story extension to the road's citrus canning plant at Mission, Tex.

UNION PACIFIC.—As part of a general improvement program at various points

this road has awarded the following contracts: Knapp Construction Company, Lawrence, Kan., amounting to \$21,000, for a general renovation of the passenger station at Lawrence, the work to include construction of a concrete floor, installation of acoustical treatment on the ceiling, and construction of a station concrete platform; McNeil Construction Company, Los Angeles, Cal., amounting to \$22,000, for the construction of an emergency hospital building in the east yards at Los Angeles. Another contract, amounting to \$24,000, has been awarded the latter company for the construction of a locker and toilet building for backshop employees of the east yard at Los Angeles.

Supply Trade

L. R. Gurley has been appointed vice-president of the **T-Z Railway Equipment**, Chicago, effective January 1.

The Columbia Chemical Division of the **Pittsburgh Plate Glass Company** has acquired the **Pacific Alkali Company's** Bartlett, Cal., plant and Los Angeles, Cal., sales office. A new district sales office at San Francisco, Cal., will be opened after the first of the year.

The varied engineering functions of the **American Engineering Company**, Philadelphia, Pa., have been consolidated into one engineering department under **H. E. Preston**, who has been elected vice-president in charge of engineering.

J. P. Lawton, manager, at Des Moines, Iowa, for the **Graybar Electric Company**, has been appointed district commercial manager, northwestern district, with headquarters in Seattle, Wash., to succeed **J. H. Kelly**, who is retiring after 38 years of service.

On December 22, **Pullman, Inc.**, announced that it will acquire for cash, with price to be finally determined in accordance with conditions of the sale contract, the entire outstanding stock of the **M. W. Kellogg Company** of Jersey City, N. J. The Kellogg Company will be operated as a separately incorporated member of the Pullman group of companies, with the present staff of officers and employees, and continuing as a specialized research, manufacturing and engineering-construction company. **M. W. Kellogg**, president of the company, has been elected a member of the board of directors of Pullman.

R. M. Hamilton, vice-president of the T. J. Moss Tie Company, St. Louis, Mo., has resigned to become executive vice-president of **D. B. Frampton & Co.**, Pittsburgh, Pa., and the **Baker Wood Preserving Company**, Marion, Ohio, with general supervision over sales and operations. Mr. Hamilton, upon returning from overseas duty in World War I, where he served as a first lieutenant with the 136th Machine Gun Battalion of the 37th

Division, entered the employ of the Central Creosoting Company at Finney, Ohio (now a part of the Wood Preserving division of the Koppers Company). In 1921 he resigned to become associated with the T. J. Moss Tie Company where he served as general foreman of its St. Louis plant and later in the sales department. In 1930, he went with D. B. Frampton & Co. as vice-president in charge of sales and resigned in 1936 to become vice-president of the T. J. Moss Tie Company.

R. A. Williams has been appointed in charge of sales for the **American Car & Foundry Co.** to succeed **William L. Stancliffe**, whose retirement from active service was reported in the *Railway Age* of December 23. Mr. Williams was elected a vice-president of the company in December, 1943, and had been Mr. Stancliffe's chief assistant in the sales organization. He joined the engineering department at the a.c.f. St. Louis, Mo., plant in 1924 and subsequently served in varying capacities



R. A. Williams

as sales engineer at several of the company's sales offices and more recently as district sales manager at the Cleveland, Ohio, and Washington, D. C., offices.

OBITUARY

Charles S. Trott, assistant treasurer and sales manager of the Parker-Kalon Corporation, died December 19. He was 45 years of age.

James D. Cartin, general manager of the New York Air Brake Company's plant at Watertown, N. Y., whose death on December 16 at the age of 67 was reported in the *Railway Age* of December 23, had served in the company's plant for the past 45 years. He joined the Watertown plant in 1899 as electrician in the maintenance and construction department and later was appointed chief electrician and superintendent of that department. He was appointed plant superintendent in 1917 and was in charge of the installation and maintenance of munitions machinery for the last war. He was promoted to general superintendent of the plant in October, 1918, appointed acting general manager in 1925 and general manager in 1928.

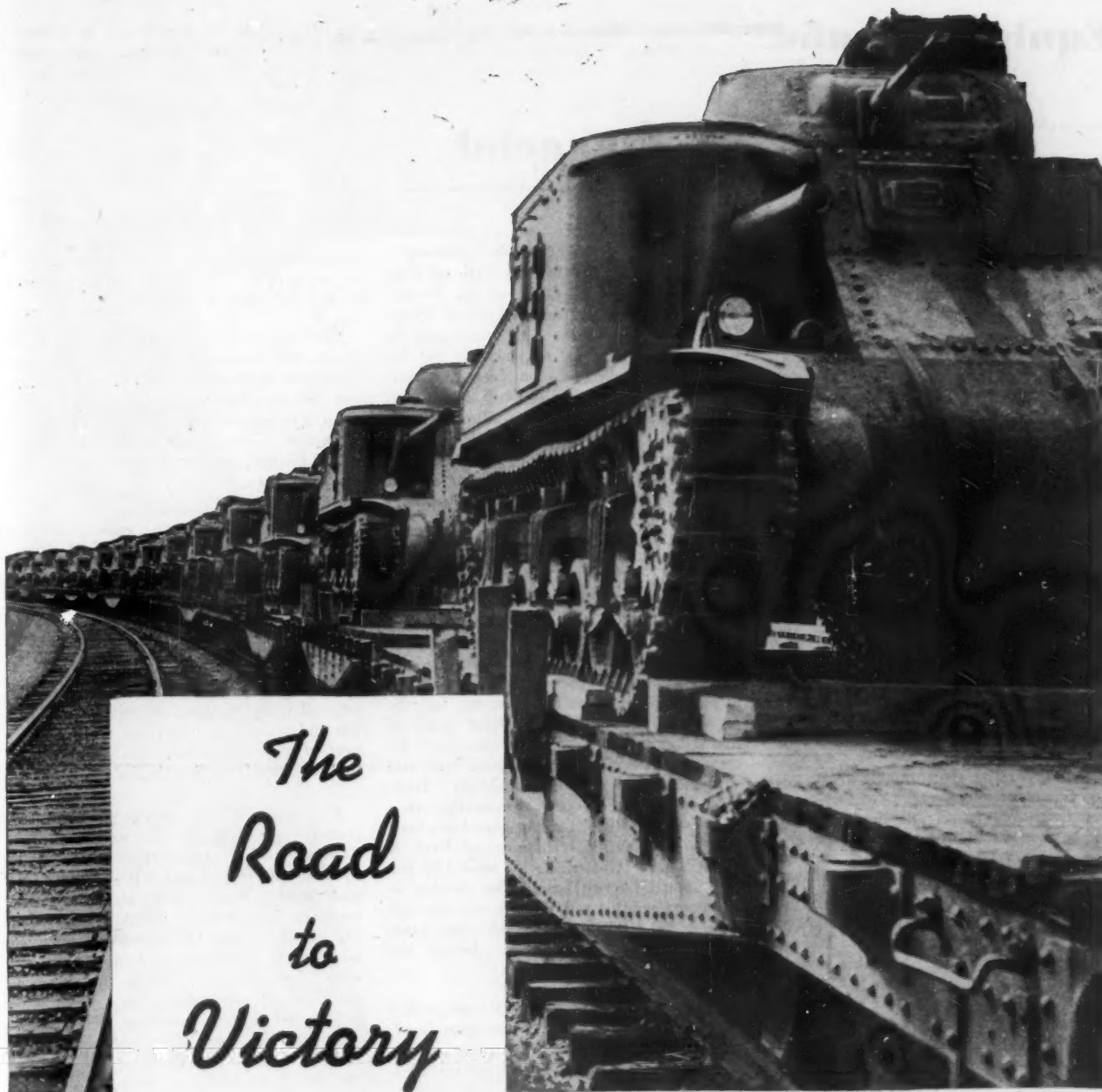
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Equipment and Supplies

Frisco Authorized to Spend \$2,911,907

The St. Louis-San Francisco was authorized by the United States district court at St. Louis on December 22 to spend \$2,911,907 for additions and betterments to the railroad's property in 1945. Total cost of Frisco's 1945 improvement budget is \$4,789,580, of which \$2,911,907 is chargeable to additions and betterments after deduction of salvage, retirement and operating expenses. An additional sum of \$103,249 will be expended for Frisco Lines of Texas to bring the 1945 improvement budget to \$4,892,829.

Roadway improvements for 1945 total \$3,310,936 including \$993,941 for new rails and other track material; \$705,673 for additional main tracks; \$494,126 for bridges, trestles and culverts; and \$453,440 for signals and interlockers. The budget also calls for \$1,478,644 for mechanical improvements including \$283,543 for increasing efficiency of locomotives, \$846,798 for improvements to freight cars and \$272,378 for modernization of passenger cars.

The budget includes provision for 69 mi. of new rails; the construction of 3 mi. of new track near Hancock, Mo., to reduce steep grades; the streamlining of 10 passenger cars; the conversion of 7 locomotives from coal to oil; the installation of 126 mi. of automatic block signals between Wetumka, Okla., and Staley, and the equipping of 2,740 freight cars with new AB brakes.

The proposed construction near Hancock will reduce maximum grade from 1.75 per cent to 0.8 per cent. Cost of this work is estimated at \$705,673.

IRON AND STEEL

The MAINE CENTRAL has ordered 4,980 tons of 112-lb. rail and 100 tons of 100-lb. rail for 1945 delivery from the Bethlehem Steel Company.

The NORFOLK SOUTHERN has ordered 853 tons of 100-lb. rail from the Bethlehem Steel Company.

FREIGHT CARS

THE NEW YORK, NEW HAVEN & HARTFORD has ordered 500 steel wood-lined box cars from the Pullman Standard Car Mfg. Co.

SIGNALING

The CANADIAN PACIFIC has placed orders with the Union Switch & Signal Co., for materials to install a system of absolute permissive block signaling on 108 mi. of single track between London, Ont., and Windsor on the Windsor subdivision. Included are searchlight signals, plug-coupled

relays with housings, rectifiers and switch boxes. The field construction will be done by the railway signal construction forces.

Financial

BALTIMORE & OHIO.—Issues Equipment Notes.—On December 22, the Baltimore & Ohio accepted a bid by the National City Bank of Cleveland, Ohio, of an interest rate of 1.61 per cent on \$720,000 of equipment notes, series H. The notes will be issued, subject to the approval of the Interstate Commerce Commission, in connection with the purchase of 200 50-ton steel box cars from the Greenville Steel Car Company. This was the eighth issue of equipment notes offered by the company since May of this year, representing a total principal amount of \$6,618,400. The interest rates on these notes range from 1.50 to 1.875 per cent or an average of slightly less than 1.69 per cent. Previous item in *Railway Age* of December 23, page 976.

BALTIMORE & OHIO.—Promissory Notes.—Division 4 of the Interstate Commerce Commission has authorized this road to issue \$632,350 of series E promissory notes in evidence of, but not in payment for, the unpaid portion of the purchase price of two 4,000-hp. Diesel-electric passenger locomotives obtained under a conditional sale agreement from the Electro-Motive Division of General Motors Corporation at a total cost of \$702,612. The notes have been sold to the National Commercial Bank & Trust Co. of Albany, N. Y., on a 1.65 per cent annual interest basis. The division in its report pointed out that the carrier had retired \$41,460,721 of funded debt, aside from equipment obligations, during the current year.

CHICAGO, ROCK ISLAND & PACIFIC.—Reorganization.—The general mortgage bondholders committee has filed notice of an appeal from an order issued by the Federal district court on November 8, authorizing the trustees to pay the Reconstruction Finance Corporation's claim of \$18,000,000. The perfection of an appeal and subsequent hearings in the Circuit Court of Appeals will consume considerable time, it is anticipated, and in the meantime the district court can take no action looking toward confirmation of the plan.

On December 20, the Federal district court at Chicago authorized the trustees to enter into an agreement with the Atchison, Topeka & Santa Fe, the Colorado & Southern, the Chicago, Burlington & Quincy and the Denver & Rio Grande Western to purchase outstanding bonds on the Denver Union Terminal Company, which total about \$4,000,000. The mortgage on the terminal is due March 1, 1945, and various expenses, according to attorneys, would bring the purchase price to about \$4,000,000. Each railway has been paying \$30,000 a year for the use of the terminal.

DELAWARE & HUDSON.—Rome & Clinton Dissolution.—The New York Public Service Commission has approved a petition for

the dissolution of the Rome & Clinton, which owns a line extending from a point north of the New York Central tracks in Rome, N. Y., to a connection with the New York, Ontario & Western at Clinton, N. Y. Under agreements with the Delaware & Hudson, the Rome & Clinton will receive certain payments which it will use to pay a liquidating dividend of \$50 per share to its stockholders. The company has 3,453 shares of \$100 par value common stock outstanding, of which a majority is reported to be held by or for the account of the Delaware & Hudson.

LOUISVILLE & NASHVILLE.—Capital Stock Split.—On December 21, directors of the Louisville & Nashville authorized a two for one split-up of the company's capital stock, subject to approval by stockholders and the Interstate Commerce Commission. There are 1,170,000 shares of \$100 par capital stock now outstanding.

NORTHERN PACIFIC.—Operating Rights.—This company has applied to the Interstate Commerce Commission for authority to enter into an exclusive operating agreement under which it would perform service over a line being constructed by the federal government from Shelton, Wash., the terminus of an N. P. branch, to Bremerton and the adjacent Bangor magazine area, a total distance of about 48 miles. Bremerton and vicinity now have no physical connection with any railway line, being served by boat lines from Seattle and other points.

PENNSYLVANIA.—Refinancing.—This company has applied to the Interstate Commerce Commission for authority to issue \$60,000,000 of series F general mortgage bonds. The interest rate is to be determined by competitive bidding for \$51,782,000 of the issue to be sold publicly. In addition, \$7,108,000 of the issue is to be acquired by companies within the Pennsylvania system, while the balance of the issue is to be held in its treasury or special funds. The proceeds, with other funds, are to be used to retire \$60,000,000 of 40-year 4½ per cent gold debenture bonds of 1930.

Dividends Declared

Connecticut & Passumpsic Rivers.—6% preferred, \$3.00, semi-annually, payable February 1, 1945, to holders of record January 2, 1945.

Massachusetts Valley.—\$3.00, semi-annually, payable February 1, 1945, to holders of record January 2, 1945.

Northern Central.—\$2.00, semi-annually, payable January 15, 1945, to holders of record December 30.

Piedmont & Northern.—(year-end) \$1.00, payable January 20, 1945, to holders of record January 5, 1945.

Richmond, Fredericksburg & Potomac.—non-voting common, \$3.00, semi-annually; voting common, \$3.00; extra on each, \$2.00; 6% (gtd.) preferred, extra, \$2.00; 7% (gtd.) preferred, extra, \$1.00; dividend obligations, \$3.00, semi-annually; extra, \$2.00; all payable December 23 to holders of record December 22.

Stony Brook.—increased semi-annually, \$3.00, payable January 5, 1945, to holders of record December 30.

Average Prices Stocks and Bonds

	Dec. 26	Last week	Last year
Average price of 20 representative railway stocks..	47.64	47.64	34.49
Average price of 20 representative railway bonds..	93.15	93.18	80.36

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Railway Shop Battalions and in all the
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and fighting for the day when Christ-
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Railway Officers

The trusteeship of the Alabama, Tennessee & Northern was discontinued effective November 1, and on that date the Alabama, Tennessee & Northern Railroad Company took over the properties of the Alabama, Tennessee & Northern Railroad Corporation. The following lists officers of the new company, giving where available, the position formerly held: **John T. Cochran, Jr.**, former trustee, now president; **William H. Armbrrecht, Jr.**, vice-president; **E. A. Carstens**, secretary, treasurer and purchasing agent as before; **Marie A. White**, assistant secretary; **G. C. Nichols**, former general manager, now vice-president and general manager; **Z. M. Morris**, superintendent of transportation; **F. J. Garner**, master mechanic as before; **E. M. Gleason, Jr.**, chief engineer; **H. G. Pringle**, former auditor, now comptroller; **L. N. Stevens**, freight claim agent as before; **J. A. Sauce**, superintendent of car service, as before; **E. C. Ash**, former assistant traffic manager, now traffic manager; **W. E. Karcher, Jr.**, former general freight agent (rates), now traffic manager, rates—divisions; **J. C. O'Neill**, former general freight agent (solicitations), now traffic manager, solicitation—service; and **W. N. Green**, general freight agent.

EXECUTIVES

Pearce Horne, assistant vice-president, real estate and conveyancing department, of the Southern at Washington, D. C., will retire on January 1, 1945, after 53 years of railroad service.

Raymond L. Gebhardt, heretofore vice-president—operations of the New York, Ontario & Western at New York, whose appointment as co-trustee of that



Co-way Studios

Raymond L. Gebhardt

road was ratified by the Interstate Commerce Commission recently, as reported in the financial columns of the *Railway Age* of December 23, succeeds **Frederic E. Lyford**, whose resignation from that post was previously announced in the November 4 issue of *Railway Age*. Mr. Gebhardt, who

was born on September 9, 1882, at Easton, Pa., attended Lafayette College of Civil Engineering and entered railroad service on August 24, 1908, as draftsman with the Lehigh Valley. In April, 1910, he was appointed assistant engineer and on October 15, 1912, he became division engineer of the same road. On April 15, 1916, Mr. Gebhardt was appointed trainmaster and on July 23, 1918, he became division superintendent, serving on various divisions until July 1, 1941, when he left the Lehigh Valley to become executive assistant to the trustee of the New York, Ontario & Western. Mr. Gebhardt was elected vice-president—operations of that road in August, 1942, and remained in that position until his recent appointment as trustee.

FINANCIAL, LEGAL AND ACCOUNTING

Charles F. Brookes, superintendent of the real estate and conveyancing department of the Southern at Washington, D. C., will retire on January 1, 1945, after 53 years of service, and **F. H. Thompson**, assistant superintendent, has been named to succeed him. **Haviland Hobbs** and **C. E. LeFoe** have been appointed assistant superintendents, and **W. J. Calnan**, chief conveyancer.

Walter V. Wilson, comptroller of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, has retired. Mr. Wilson was born in London, England, on February 14, 1874, and entered railway service in November, 1893, as a clerk in the



Walter V. Wilson

purchasing department of the Elgin, Joliet & Eastern, subsequently holding various positions in the freight office at Joliet, Ill. In 1898 he went with the Chicago Junction where he served as traveling auditor and chief clerk to the auditor, with headquarters at Chicago. From 1908 to 1913 Mr. Wilson was attached to the Interstate Commerce Commission, and in the latter year he was promoted to examiner in charge of the Chicago branch office. In 1914 he was appointed assistant general auditor of the Milwaukee at Chicago, and in 1918 he went to Washington, D. C., to serve with the U. S. Railroad Administration for the duration of federal control of the railroads. In 1920 Mr. Wilson returned to the Milwaukee as assistant comptroller, and in

the same year he was promoted to the position he held at the time of his retirement.

Charles A. Rausch, assistant secretary of the Baltimore & Ohio at Baltimore, Md., has been named secretary with the same headquarters effective January 1, 1945, succeeding **George F. May**, who will retire at that time. Mr. Rausch, who was born at Baltimore on January 3, 1886, entered railroading with the Baltimore & Ohio in the accounting department on December



Charles A. Rausch

27, 1901. He transferred to the paymaster's office, treasury department, in November, 1906, and three years later joined the office of the president. On July 1, 1911, Mr. Rausch became secretary to the president, and during the first world war took charge of President Willard's offices in Washington while Mr. Willard served as chairman of the Advisory Commission of the Council of National Defense and later as chairman of the War Industries Board. On May 20, 1936, Mr. Rausch was appointed assistant to the president at Baltimore, and in 1941, he became assistant secretary and assistant to the chairman of the board, the positions he will relinquish to become secretary.

Mr. May was born at Brooklyn, N. Y., on July 22, 1871, and entered railroad service with the Baltimore & Ohio Southwestern (now part of the Baltimore & Ohio) on January 5, 1892. After serving successively as stenographer, traveling secretary and secretary to the president of that road, he was named its secretary in January, 1900, remaining in that post until December, 1910. He also served as assistant secretary of the Baltimore & Ohio from September, 1902, to February, 1929, when he was advanced to secretary, the position from which he will now retire.

TRAFFIC

F. C. Albrecht has been named general agent of the Chicago, South Shore & South Bend at Pittsburgh, Pa.

William H. Russell, assistant director of the Railway Transport Department of the Office of Defense Transportation, who has been on leave from the Southern since July 1, 1942, will return to his former position as assistant general freight agent at Atlanta, Ga., on January 1, 1945. At the same time, **Marion M. Boyle**, commer-



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cial agent, will be advanced to division freight agent; **Robert E. Smith**, commercial agent, will become district freight agent, and **Jerry L. Townshend**, district freight and passenger agent at New York, will be appointed district freight agent, all with headquarters at Atlanta.

Frank J. Donovan has been named assistant foreign freight agent of the New York Central at New York.

A. A. Fallon has been appointed division freight agent of the Lehigh Valley at Buffalo, N. Y.

Virgil T. Ivie, assistant general freight agent of the Southern at Atlanta, Ga., has been named general agent at Savannah, Ga., effective January 1, 1945, succeeding **Paul A. Wright**, who will retire at that time after 46 years of railroad service.

Elliott E. Brothers, traveling freight agent of the Delaware, Lackawanna & Western at Chicago, has been named division freight agent at Scranton, Pa., effective January 1, 1945, succeeding **Charles V. McKowne**, who will retire at that time.

E. D. Phillips, passenger agent of the Baltimore & Ohio at Chicago, has been promoted to division passenger agent, with headquarters at St. Louis, Mo., succeeding **A. N. Edmondson**, who has retired after 51 years of service.

P. E. Johnson has been appointed general agent of the Chicago Great Western, with headquarters at Spokane, Wash., succeeding **J. S. Coward**, whose promotion to assistant general freight agent, with headquarters at Omaha, Neb., was reported in the *Railway Age* of December 9.

Harry E. Benson, general freight agent of the Minneapolis, St. Paul & Sault Ste. Marie at Minneapolis, Minn., has been promoted to assistant freight traffic manager with the same headquarters. **G. K. Reid**, assistant general freight agent, has been advanced to general freight agent, with headquarters as before at Minneapolis. **O. A. Roedell**, general baggage and milk agent at Minneapolis, has been advanced to manager of baggage, milk and dairy traffic, with the same headquarters, and **J. W. Lydon**, has been appointed assistant general passenger agent at Minneapolis. **E. N. Phelps**, **B. G. Spears** and **W. C. Giese**, have been appointed assistant general freight agents respectively at St. Paul, Minn., Duluth, and Milwaukee, Wis. **R. F. Berndt**, chief clerk in the office of the general traffic manager, has been advanced to assistant to the general traffic manager, with headquarters as before at Minneapolis. **J. S. McGogy**, traveling freight agent, with headquarters at Minot, N. D., has been promoted to general agent at Thief River Falls, Minn., replacing **H. W. Monson**, who has been transferred to Minot, where he succeeds **A. T. Peterson**, who has been appointed division freight agent, with headquarters at Minneapolis. He relieves **G. W. Hawes**, who has retired after 50 years of service. **R. F. Ronnan**, district freight agent, has been appointed division freight agent, with head-

quarters as before at Minneapolis, a change of title.

OBITUARY

Hugh Ronalds, superintendent of motive power of the Lehigh & New England at Pen Argyl, Pa., died there on December 20. He was 56 years old.

T. M. Kirkby, chief mechanical officer of the Green Bay & Western, with headquarters at Green Bay, Wis., died while on a hunting trip near Crandon, Wis., on November 26. Mr. Kirkby was born at Oslo, Norway, on July 4, 1886, and was a graduate of the University of Norway, Oslo. He entered railway service in 1905 as a mechanical draftsman of the Chicago, Milwaukee, St. Paul & Pacific, subsequently serving as a mechanical draftsman on the Duluth & Iron Range (now the Duluth, Missabe & Iron Range), from 1911 to 1916. In the latter year he returned to the Milwaukee as a mechanical draftsman and two years later was promoted to chief draftsman, mechanical department, at Chicago. In 1922 Mr. Kirkby was advanced to mechanical assistant to the general superintendent with the same headquarters. In 1926 Mr. Kirkby went with the Missouri-Kansas-Texas as a mechanical engineer with headquarters at Parsons, Kan., and on April 1, 1936, he became mechanical representative of the G. B. & W., being promoted five months later to superintendent of motive power and equipment at Green Bay. On February 1, 1944, he was advanced to the position he held at the time of his death.

Walter H. Kirkbride, who retired in February of this year as chief engineer of the Southern Pacific, with headquarters at San Francisco, Cal., died at Dunsmuir, Cal., on December 20, following a brief



Walter H. Kirkbride

illness. Mr. Kirkbride was born at Pueblo, Colo., on January 22, 1874, and graduated in civil engineering from Stamford University in 1895. After serving as a United States deputy mineral surveyor, he entered railway service in 1898 as assistant engineer on location and construction of the Sierra Railway of California. In 1902 he went with the Southern Pacific as an assistant engineer, being advanced to

assistant resident engineer in 1906, and to division engineer in 1909. In 1917, Mr. Kirkbride was transferred to the operating department as assistant superintendent of the Sacramento division. A year later, during federal control of the railroads, he was appointed chief engineer of the Southern Pacific, Pacific lines, and in 1920, he was appointed engineer maintenance of way and structures, holding that position until April, 1932, when he was promoted to the position he held at the time of his retirement. Among projects with which he has been associated were the new Redding-Delta line around Shasta Dam, the Martinez-Benicia double-track bridge, longest west of the Mississippi; Los Angeles Union Passenger Terminal; extensive San Jose line change; San Joaquin Valley lines reconstruction and relocation in Soledad Canyon after the 1938 floods, and construction of the 400-ft. span crossing the Colorado River at Yuma, Ariz.

Leroy V. Porter, vice-president, accounting, of the New York Central System, died December 22 at his home in Bronxville, N. Y., after a long illness. Mr. Porter, who was born at Hopkins, Mich., on



Leroy V. Porter

September 11, 1876, entered railroad service on September 21, 1896, with the Indiana, Illinois & Iowa (now part of the New York Central), and after serving successively as station agent and telegraph operator, he was named traveling auditor and general bookkeeper in November, 1901. In May, 1906, he transferred to the Lake Shore & Michigan Southern (now also part of the New York Central) as general clerk at Cleveland, Ohio, remaining in that post until August, 1909, when he became chief clerk to the auditor of that road. The following January he was appointed assistant auditor there, and in October, 1914, he was named chief clerk to the vice-president, accounting department, of the New York Central Lines, at New York. Mr. Porter was promoted to assistant comptroller in July, 1918, and he remained at that post until January, 1930, when he became comptroller. In March, 1937, he was advanced to assistant vice-president and comptroller, and in September, 1941, vice-president and comptroller. Mr. Porter's appointment as vice-president, accounting, was announced in the September 23 issue of *Railway Age*.

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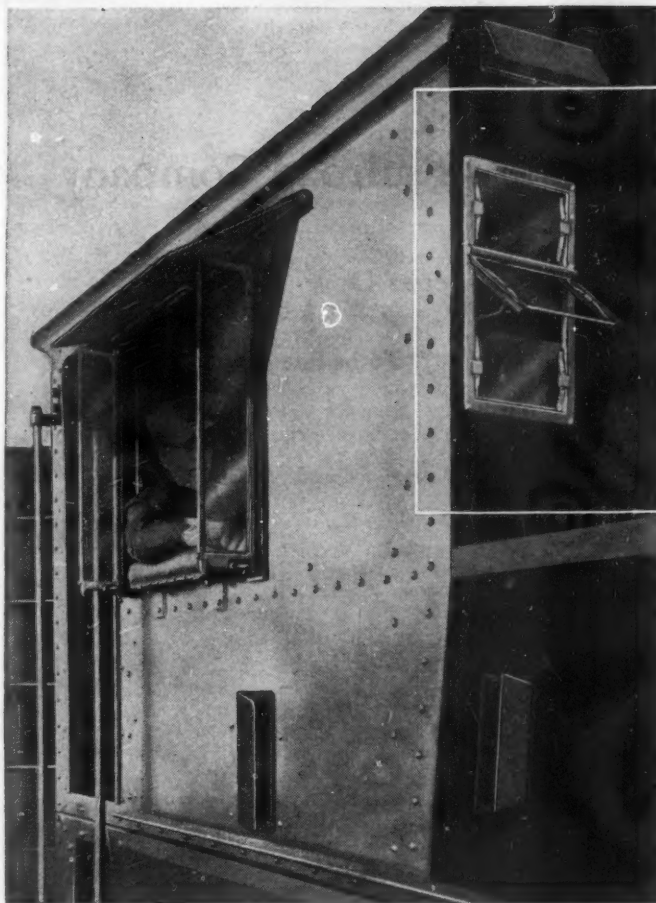
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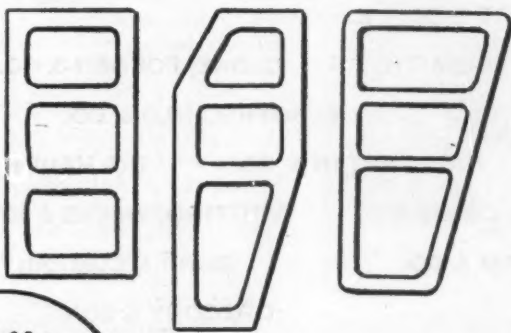
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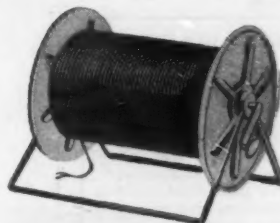
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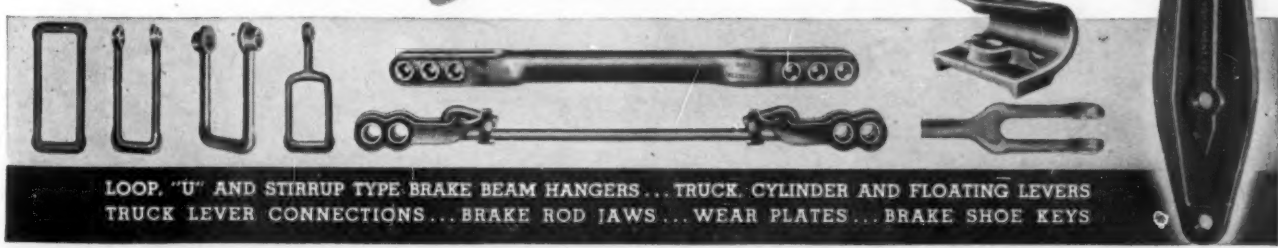
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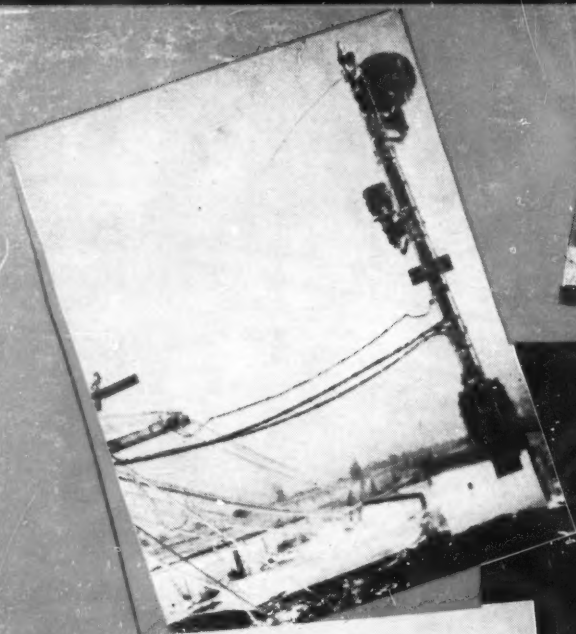
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